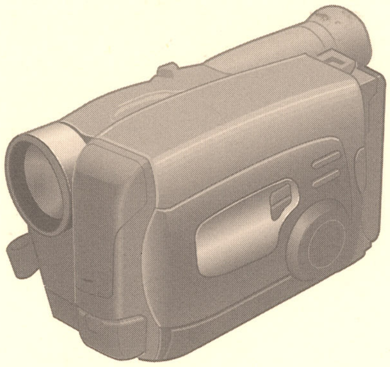
JVC

SERVICE MANUAL

COMPACT VHS CAMCORDER

GR-SZ3000EG



Super VHS

S-VHS-C 625 VHS PAL

SPECIFICATION

GENERAL

Format	: S-VHS/VHS PAL standard
Power source	: DC 6 V ⎓
Power consumption	: 6.8 W
Signal system	: PAL-type
Video recording system	
Luminance	: FM recording
Colour	: Converted sub-carrier direct recording Conforms to S-VHS standard
Cassette	: S-VHS-C / VHS-C cassette
Tape speed	: 23.39 mm/sec
Recording time	
Max.	: 60 minutes (with EC-60 cassette)
Operating temperature	: 0°C to +40°C
Operating humidity	: 35% to 80%
Storage temperature	: –20°C to +50°C
Weight	: Approx. 860 g
Dimensions	: 112 (W) x 112 (H) x 232 (D) mm

CAMERA

Pick up	: 1/4" format CCD
Lens	: F1.6, f = 3.8 to 68.4 mm, 18:1 power zoom lens with auto iris and macro control, filter diameter 46 mm
Viewfinder	: Electronic viewfinder with 0.5" B/W CRT
White balance adjustment	: Auto/Manual adjustment

VIDEO

Output	: 1 Vp-p, 75 ohms, unbalanced (via VIDEO out connector)

AUDIO

Output	: –8 dBs, 1 k-ohm (via AUDIO out connector)
External microphone input	: –68 dBs, high impedance, unbalanced with ø3.5 mm (MONO)

AC POWER ADAPTER/BATTERY CHARGER (AA-V11EG)

Power requirement	: AC 110 to 240 V∼, 50/60 Hz
Power consumption	: 23 W
Output	: DC 8.5 V ⎓, 1.3 A (CHARGE), DC 6.3 V ⎓, 1.8 A (VTR)
Charging system	: Constant current, peak detection, timer controlled
Dimensions	: 150 (W) x 42 (H) x 68 (D) mm
Weight	: Approx. 350 g

CASSETTE ADAPTER (C-P7U)

Dimensions	: 188 (W) x 25 (H) x 104 (D) mm
Weight	: Approx. 240 g
Accessory	: "R6 (AA)"-size battery x 1

Provided Accessories .... ☞ **pg. 3**

Optional Accessories

- **Battery Packs BN-V12U, BN-V22U, BN-V25U**
- **Car Battery Charger BH-V3E**
- **RF Unit RF-V5E**
- **S-VHS-C Cassettes SE-C45/30**
- **VHS-C Cassettes EC-60/45/30**
- **Active Carrying Bag CB-V7U**
- **Wireless Remote Control Unit RM-V704U or RM-V700U**

Some acccessories are not available in some areas. Please consult your nearest JVC dealer for details on accessories and their availability.

E.&O.E.Design and specifications subject to change without notice.

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No. 86344
May 1997

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Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

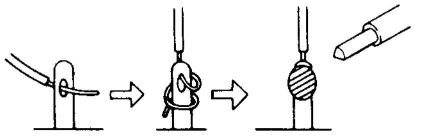


Fig. 1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it.

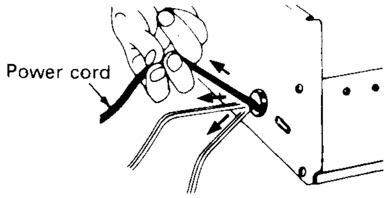


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.
    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

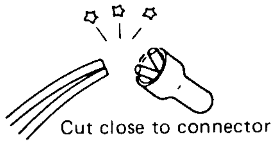


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

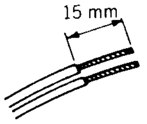


Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

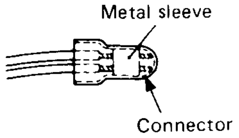


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

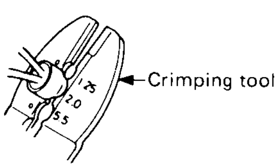


Fig. 6

(5) Check the four points noted in Fig. 7.

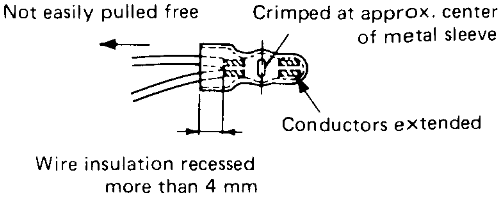

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig. 7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

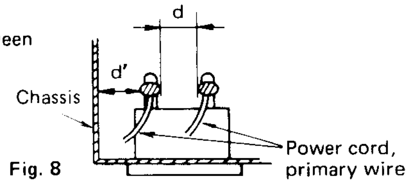


Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
   Measuring Method: (Power ON)
   Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

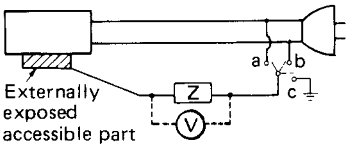


Fig. 9

5. **Grounding (Class I model only)**
   Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
   Measuring Method:
   Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

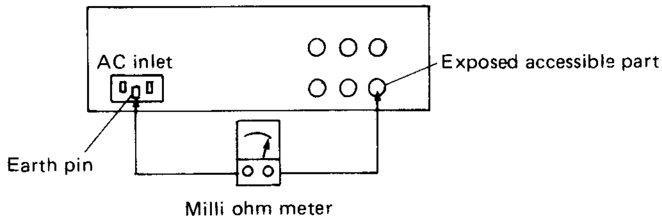


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	—	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

INSTRUCTIONS

Dear Customer,
Thank you for purchasing the JVC Compact VHS camcorder. Before use, please read the safety information and precautions contained in the following pages to ensure safe use of your new camcorder.

Using This Instruction Manual
- All major sections and subsections are listed in the Table Of Contents (☞ pg. 3).
- Notes appear after most subsections. Be sure to read these as well.
- Basic and advanced features/operation are separated for easier reference.

It is recommended that you . . .

..... refer to the Index (☞ pgs. 44 – 46) and familiarize yourself with button locations, etc. before use.

..... read thoroughly the Safety Precautions that follow and cautions (☞ pgs. 47, 48). They contain extremely important information regarding the safe use of your new camcorder.

SAFETY PRECAUTIONS

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

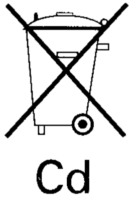
CAUTIONS:
- To prevent shock, do not open the cabinet. No user serviceable parts inside. Refer servicing to qualified personnel.
- When you are not using the AC Power Adapter/Battery charger for a long period of time, it is recommended that you disconnect the power cord from AC outlet.

S-VHS C 625 VHS C PAL

Cassettes marked "S-VHS C" and "VHS C" can be used with this camcorder. However, S-VHS recordings are possible only with cassettes marked "S-VHS C".

Warning on lithium battery
The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate.
Replace battery with Panasonic (Matsushita Electric), Sanyo or Maxell CR2025; use of another battery may present a risk of fire or explosion.
- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.

Crossed Out Dust Bin Mark



- The Crossed Out Dust Bin Mark on the battery pack indicates that the product complies with Directives 91/157/EEC and 93/86/EEC.
- Nickel-Cadmium (Ni-Cd) battery pack must be recycled or disposed of properly.

This camcorder is designed to be used with PAL-type colour television signals. It cannot be used for playback with a television of a different standard. However, live recording is possible anywhere. Use the BN-V12U/V22U/V25U battery packs and, to recharge them, the provided multi-voltage AC Power Adapter/Charger. (An appropriate conversion adapter may be necessary to accommodate different designs of AC outlets in different countries.)

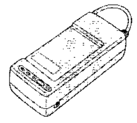
NOTES:
- *The rating plate (serial number plate) and safety caution are on the bottom and/or the back of the main unit.*
- *The rating plate (serial number plate) of the AC Power Adapter/Charger is on its bottom.*

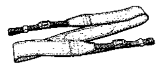
This unit is produced to comply with Standard IEC Publ. 65.

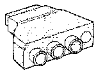
MAJOR FEATURES

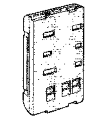
- **Program Manager (☞ pg. 14 – 25)**
- **Programme AE with Special Effects (☞ pgs. 14, 15)**
  - Auto Mode Lock • Auto Mode Release
  - Electronic Fog Filter • ND Effect
  - Sepia • Twilight • Sports
  - 1/1000 sec. High Speed Shutter
  - 1/2000 sec. High Speed Shutter
- **Picture Stabilizer (☞ pg. 18)**
- **Digital Hyper Zoom (☞ pg. 12)**
- **Digital Fades/Wipes (☞ pg. 19)**
- **EasyEdit with Random Assemble Editing (☞ pg. 34 – 37)**

PROVIDED ACCESSORIES

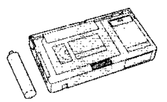

• AC Power Adapter/ Charger AA-V11EG

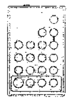

• Shoulder Strap

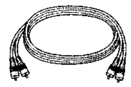

• Cable Adapter

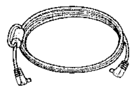

• Battery Pack BN-V12U

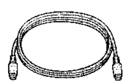
• Lithium Battery CR2025 x 2

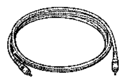

• Cassette Adapter C-P7U


• Remote Control Unit RM-V704U or RM-V700U


• AUDIO/VIDEO (A/V) cable


• DC cord


• S-VIDEO cable


• Editing cable

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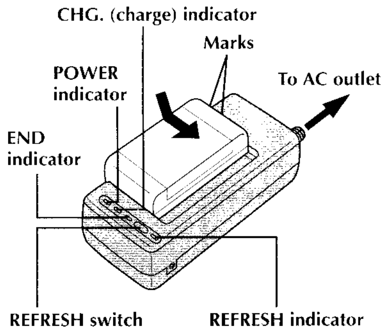
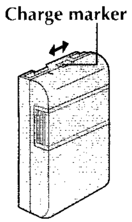
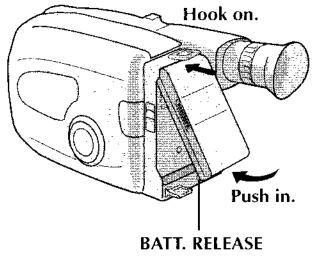




**** CHARGE MARKER**
A charge marker is provided on the battery pack to help you remember whether it has been charged or not. Two colors are provided (red and black) - you choose which one means charged and which means discharged.



ATTENTION:

Before detaching the power source, make sure that the camcorder's power is turned off. Failure to do so can result in a camcorder malfunction.

Power

This camcorder's 3-way power supply system lets you choose the most appropriate source of power.

NOTES:

- *No function is available without power supply.*
- *Use only specified power supply.*
- *Do not use provided power supply units with other equipment.*

CHARGING THE BATTERY PACK

1 SUPPLY POWER

Connect the charger's AC power cord to a wall outlet. The power indicator lights.

2 ATTACH BATTERY PACK

Align the marks and slide the battery pack in the direction of the arrow until it locks in place.
The CHG. indicator lights.

3 DETACH BATTERY PACK

When charging is completed, the END indicator lights. Slide the battery pack opposite the direction of the arrow.

BATT. PACK	CHARGE	DISCHARGE
BN-V12U	approx. 1 hr. 10 min.	approx. 3 hrs. 30 min.
BN-V22U	approx. 2 hrs. 10 min.	approx. 7 hrs.
BN-V25U	approx. 2 hrs. 40 min.	approx. 10 hrs.

USING THE BATTERY PACK

1 ATTACH BATTERY PACK

Hook its top end to the camcorder and push the battery pack in until it locks in place.

2 DETACH BATTERY PACK

Slide BATT. RELEASE and pull out the battery pack.

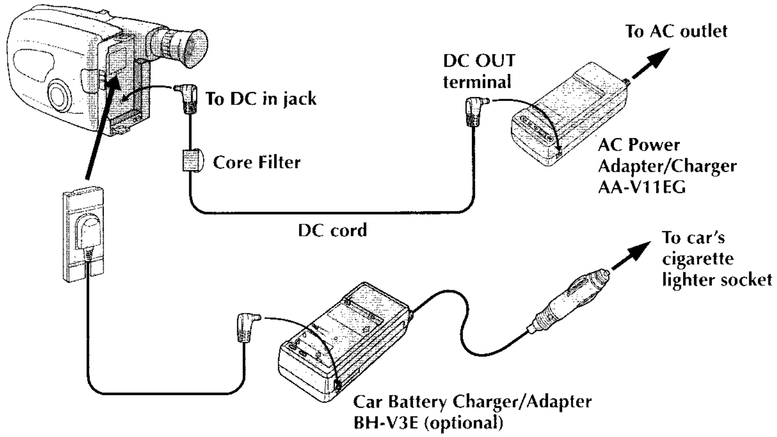
BATT. PACK	APPROXIMATE RECORDING TIME
BN-V12U	50 min.
BN-V22U	1 hr. 50 min.
BN-V25U	2 hrs. 25 min.

****REFRESH**
The AC power adapter features a REFRESH function that allows you to fully discharge the battery pack before recharging.

To discharge the battery . . .
..... attach the battery pack to the adapter as shown in the illustration to the left. Then push REFRESH. The REFRESH indicator lights when discharging starts, and goes out when discharging is complete.

NOTES:

- *The recording time per charge is affected by such factors as the time spent in Record/Standby mode and the frequency of zooming. It is safer to have spare battery packs.*
- *Charging times noted on page 4 are for fully discharged battey pack, and discharging times are for fully charged battery pack.*
- *Charging and discharging times vary according to the ambient temperature and the status of the battery pack.*
- *Remember to set the charge marker after charging a battery pack or after detaching a discharged one from your camcorder.*
- *Perform the REFRESH function after no less than 5 chargings.*
- *High temperatures can damage the battery pack, so use only where good ventilation is available. Don't allow it to discharge in container, such as a bag.*
- *If you stop recharging or discharging part way through, make sure to remove the battery pack before unplugging the adapter's AC cord.*
- *Remove the battery pack from the adapter immediately after discharging.*
- *To avoid interference with reception, do not use the AC Power Adapter/Charger near a radio.*
- *Make sure you unplug the DC cord before charging or discharging the battery pack.*
- *A blinking CHG. indicator means that the battery pack has become hot. Wait until it cools down to continue.*
- *The CHG. indicator may not light properly with a brand new battery pack, or with one that's been stored for an extended period. In this case, remove and reattach the battery pack and recharge it. The CHG. indicator should light during recharging. If not, contact your nearest JVC dealer.*


To AC outlet
DC OUT terminal
To DC in jack
Core Filter
AC Power Adapter/Charger AA-V11EG
DC cord
To car's cigarette lighter socket
Car Battery Charger/Adapter BH-V3E (optional)

USING A CAR BATTERY

Use the optional Car Battery Charger/Adapter (connect as shown in the above illustration).

NOTES:

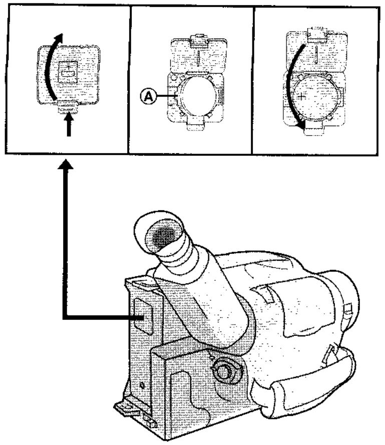
- *When using the car battery, leave the engine idling.*
- *The optional Car Battery Charger (BH-V3E) can also be used to charge the battery pack.*
- *When using the optional Car Battery Charger, refer to the respective instruction booklet.*

USING AC POWER

Use the AC Power Adapter (connect as shown in the above illustration).

NOTES:

- *The supplied AC Power Adapter/Charger features automatic voltage selection in the AC range from 110 V to 240 V.*
- *When using the provided DC cord, make sure you connect the end of the cable with the core filter to the camcorder. The core filter improves performance of equipment.*



Clock (Lithium) Battery Insertion/Removal

This battery is necessary for clock operation and to perform date/time settings.

1 SWITCH OFF POWER
Switch off the unit's power and remove the power supply unit.

2 OPEN COVER
Open the clock battery compartment cover while pressing the release tab.

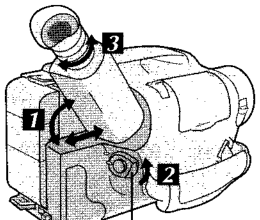
3 REMOVE BATTERY (when replacing)
Insert a pointed, non-metallic object between the battery and the compartment (Ⓐ) and pull the battery out.

4 INSERT BATTERY
Ensuring the plus (+) side is up, insert a CR2025 lithium battery and push it in.

5 CLOSE COVER
Close the compartment cover until it clicks in place.

NOTE:
See "SAFETY PRECAUTIONS" (☞ pg. 2) for information on safe handling of lithium batteries.

Viewfinder Adjustment

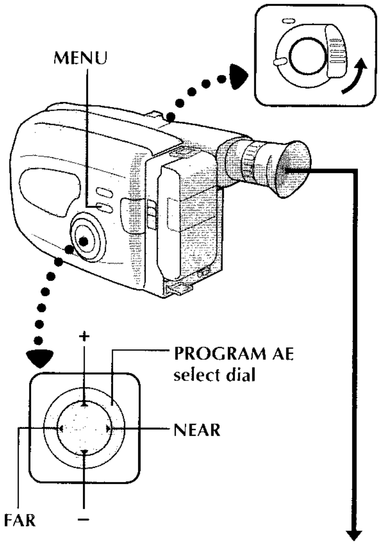


Set POWER to "CAMERA".

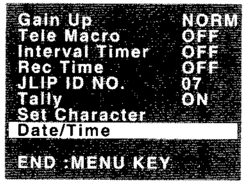
1 POSITION VIEWFINDER
Adjust the viewfinder manually for best viewability (see illustration at left).

2 SELECT MODE
Set the power switch to CAMERA.

3 ADJUST DIOPTER
Turn the diopter adjustment control until the indications in the viewfinder are clearly focused.



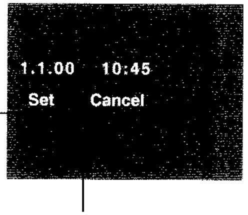
Menu Screen



```
Gain Up          NORM
Tele Macro       OFF
Interval Timer   OFF
Rec Time         OFF
JLIP ID NO.      07
Tally            ON
Set Character
Date/Time

END :MENU KEY
```

Set Time and Date Screen



```
1.1.00   10:45
 Set     Cancel
```

Date
Day/Month/Year

Time
24-hour indication

Date/Time Setting

1 SELECT MODE
First set the power switch to "CAMERA". Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 ACCESS MENU SCREEN
Press **MENU**.

3 SELECT FUNCTION
Press – to move the highlight bar down to "Date/Time", then press **NEAR**. The Set Date And Time screen appears.

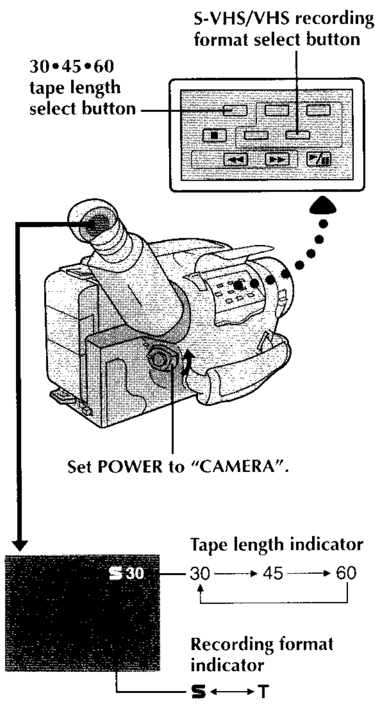
4 SET DATE/TIME
Press **FAR** or **NEAR** until the item you want to set begins blinking, then press + or – to until the correct setting appears.

- If you decide you want to return the date and time to the previous settings, press **FAR** or **NEAR** to move the highlight bar to "Cancel", then press **MENU**.
- If you're satisfied with the settings, go on to step **5**.

5 START CLOCK OPERATION
Once you've set the date and time, press **FAR** or **NEAR** until "Set" begins to blink, then press **MENU**. The Menu screen reappears.

6 CLOSE MENU
Press **MENU**.

NOTES:
- *To display the date and time in the viewfinder and on a connected TV, see "Date/Time Character Insert" (☞ pg. 22).*
- *If, in step **4**, you input an invalid date (30. 2, 31. 6, etc.) and perform step **5**, "Input Error" appears blinking at the bottom of the screen. Press **+**, **–**, **FAR** or **NEAR** to input the correct number.*


S-VHS/VHS recording format select button
30•45•60 tape length select button
Set POWER to "CAMERA".
S 30
Tape length indicator
30 → 45 → 60
Recording format indicator
S ←→ T

Tape Length Setting

Set the tape length according to the length of the tape used.

1 SET TAPE LENGTH

Press 30•45•60 until the required indication appears in the veiwfinder. 30 = 30 minutes of recording time, 45 = 45 minutes, and 60 = 60 minutes.

NOTE:

The tape remaining time (☞ pg. 11) displayed in the viewfinder is correct only if the correct tape length has been selected.

Recording Format Setting

When using an S-VHS-C cassette, set to either of the recording formats.

1 SET RECORDING FORMAT

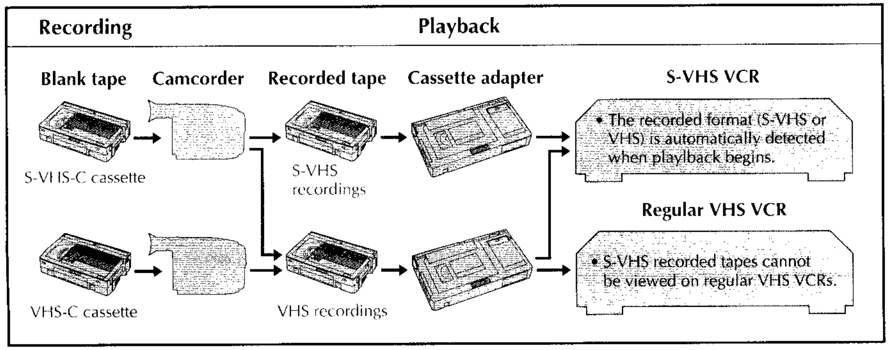
Press S-VHS/VHS button until the required indication appears in the viewfinder.

S : Super VHS
T : Regular VHS

NOTE:

Super VHS recordings cannot be made on VHS-C tapes.

COMPATIBILITY BETWEEN S-VHS AND VHS

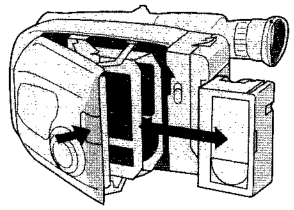

Recording
Playback
Blank tape
Camcorder
Recorded tape
Cassette adapter
S-VHS VCR
S-VHS-C cassette
S-VHS recordings
Regular VHS VCR
VHS-C cassette
VHS recordings

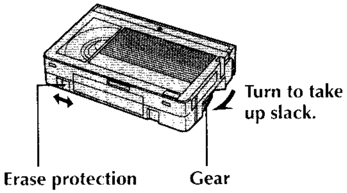
- The recorded format (S-VHS or VHS) is automatically detected when playback begins.

- S-VHS recorded tapes cannot be viewed on regular VHS VCRs.

Playback

The pictures recorded with the camcorder can be viewed in playback by directly connecting it to a TV; and can also be played back using a VCR.




Turn to take up slack.
Erase protection
Gear

Loading/Unloading A Cassette

1 OPEN CASSETTE HOLDER

Slide **EJECT** until the holder opens. Do not use force to open.

2 INSERT/REMOVE CASSETTE

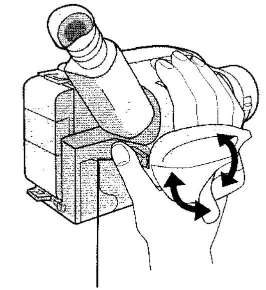
Make sure the label is facing outward.

3 CLOSE CASSETTE HOLDER

Press **PUSH** and make sure the holder is closed and locked.

NOTES:

- *A cassette holder can't be opened unless a power supply is attached.*
- *Make sure that the tape is not slack when loading the cassette. If there is any slack, turn the gear on the cassette in the direction of the arrow to take up the slack.*
- *Make sure the Erase Protection tab is in the position that allows recording. If not, slide the tab. Some cassettes have removable tabs. If the tab has been removed, cover the hole with adhesive tape.*
- *The cassette holder can't be opened while the camcorder is in the record mode.*



Grip Adjustment

1 EXPAND LOOP

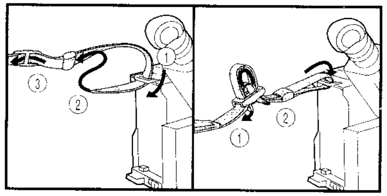
Separate the Velcro strip.

2 INSERT HAND

Pass your right hand through the loop and grasp the grip.

3 ADJUST STRAP LENGTH

Adjust so your thumb and fingers can easily operate the Recording Start/Stop button and Power Zoom lever. Refasten the Velcro strip.



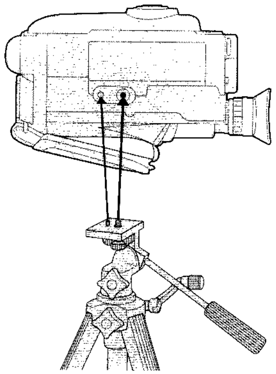
Shoulder Strap Attachment

1 ATTACH STRAP

Following the illustration at left, thread the strap through the top of the eyelet ①, then fold it back and thread it through the keeper ②, and then through the buckle ③. Repeat the procedure to attach the other end of the strap to the other eyelet, making sure the strap isn't twisted.

2 ADJUST LENGTH

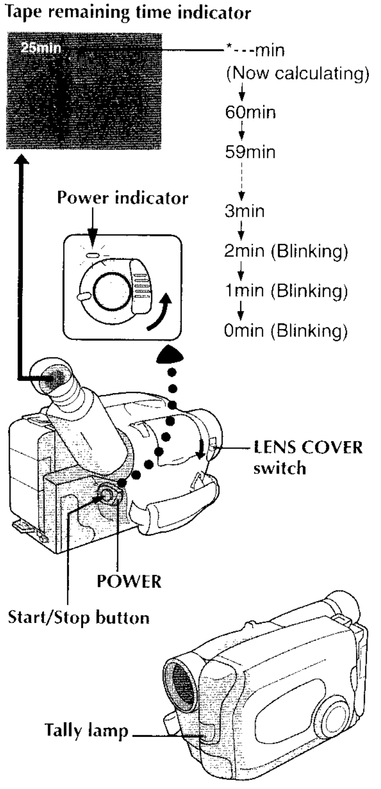
Adjust as shown in the illustration at left ①, then slide both keepers snug against the eyelets to prevent slipping ②.



Tripod Mounting

1 ALIGN AND TIGHTEN

Align the screw and camera direction stud on the tripod with the camera's mounting socket and stud hole. Then tighten the screw.



NOTE:

You should already have performed the procedures listed below. If not, do so before continuing.

- *Power (☞ pg. 4)*
- *Date/Time Setting (☞ pg. 7)*
- *Tape Length Setting (☞ pg. 8)*
- *Recording Format Setting (☞ pg. 8)*
- *Grip Adjustment (☞ pg. 10)*

1 LOAD A CASSETTE

Slide **EJECT** to open the cassette holder, then insert the cassette with the label facing out. Press **PUSH** to ensure the holder is closed and locked.

2 ENTER RECORD–STANDBY MODE

Slide the LENS COVER open/close switch to open the lens cover, then set the power switch to "CAMERA".

- The power indicator lights and the camcorder enters the Record–Standby Mode.
- The scene you're aimed at appears on the viewfinder screen, with the word "PAUSE" superimposed upon it.

3 START SHOOTING

Press the **Start/Stop** button.

- The tally lamp lights while recording is in progress, and "REC ▸▸▸" appears in the viewfinder.

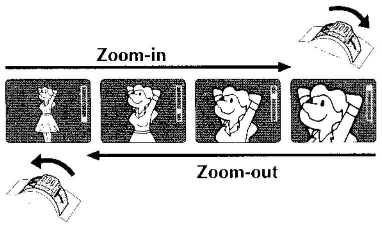
4 STOP RECORDING

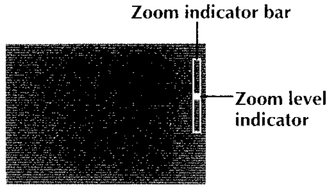
Press the **Start/Stop** button again to stop recording.

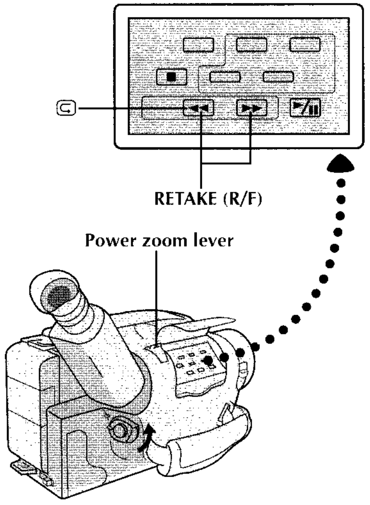
- The camcorder re-enters the Record-Standby mode.

NOTES:

- *A cassette holder can't be opened unless a power supply is attached.*
- *There may be a delay after you slide EJECT until the holder opens. Do not use force.*
- *The tape's remaining time is displayed in the viewfinder as shown.*
- *The indicated remaining time is approximate.*
- *The time required to calculate the remaining tape length, and the accuracy of the calculation, may vary according to the type of tape used.*
- *The tape remaining time displayed in the viewfinder is correct only if the correct tape length has been selected (☞ pg. 8).*
- *"TAPE END" appears when the tape reaches its end, and the power goes off automatically if left in this condition for 5 minutes. "TAPE END" also appears when a cassette whose tape is already at its end is loaded.*
- *If the Record–Standby mode continues for 5 minutes without performing Zoom or any other operations, the camcorder's power shuts off automatically. Set the Power switch to "POWER OFF", and then back to "CAMERA" to turn the camcorder on again.*
- *If the Recording Start/Stop button is pressed after the Record-Standby mode has continued for over 5 minutes, recording may not start immediately.*
- *Sometimes even simply ejecting and reloading the tape may cause the tape's present position to change slightly. If you're recording on a cassette from the middle, use the RETAKE function (☞ pg. 12) to find the end of the last recording so you don't erase any of it.*
- *The LENS COVER warning blinks for about 10 seconds when the camcorder is turned on, when the cover is closed.*







FEATURE: **Zooming**

PURPOSE: To produce the zoom in/out effect, or an instantaneous change in image magnification.

OPERATION: **36X Hyper zoom**

Digital circuitry doubles the maximum 18x magnification offered by optical zoom.

1) To zoom in, slide the Zoom Lever toward "T".

2) To zoom out, slide toward "W".

NOTES:

- *During Hyper Zoom, the speed increases the further you slide the Zoom Lever.*
- *Focusing may become unstable during Hyper Zoom. In this case, set the zoom while in Record–Standby, set manual focus or Focus Lock (☞ pg. 16, 17), then zoom in or out in Record mode.*
- *The Zoom Level Indicator (■) only moves during optical zoom. Once the Zoom Level indicator reaches the top of the zoom indicator bar, all magnification from that point is through digital processing.*
- *During digital image processing, the quality of the image may suffer.*

FEATURE: **Quick Review**

PURPOSE: To check the end of the last recording.

OPERATION: **1)** Press "Ⓖ" and release quickly during the Record–Standby mode.

- Tape is rewound for about 2 seconds and played back automatically, then pauses in Record–Standby mode for the next shot.

NOTE: *Distortion may occur at start of playback. This is normal.*

FEATURE: **Retake**

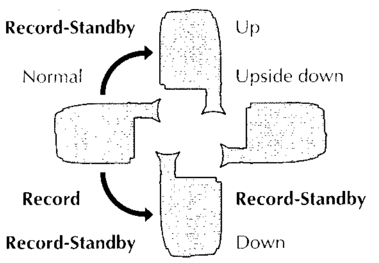
PURPOSE: To re-record certain segments.

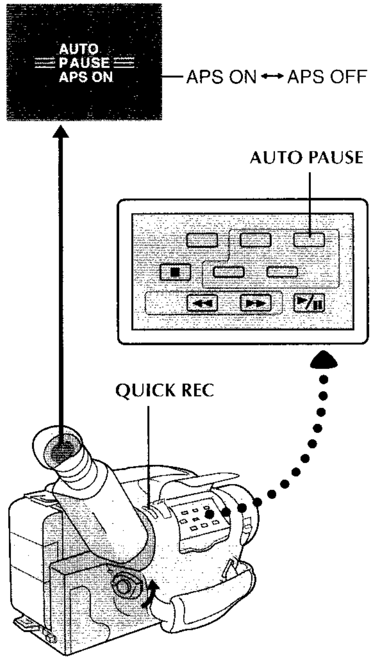
OPERATION: **1)** Make sure the camcorder is in the Record–Standby mode.

2) Press either **RETAKE** button to reach the start point for new recording.
Pressing "F" forwards the tape and pressing "R" reverses it.

3) Press Recording Start/Stop to start recording.

NOTE: *Noise may appear during Retake. This is normal.*





FEATURE: **Auto Pause System**

PURPOSE: To automatically stop recording when the camcorder is pointed down, preventing accidental recordings of the ground, your feet, etc.

OPERATION: **1)** Press **AUTO PAUSE** so that "APS ON" appears in the viewfinder for 2 seconds. When the camcorder is tilted down by a large degree from its horizontal position during recording, the Record-Standby mode is automatically engaged. During this, "AUTO" is displayed above "═PAUSE═".

- To switch off the Auto Pause System, press **AUTO PAUSE** again so that "APS OFF" appears in the viewfinder for 2 seconds.

NOTES:

- *The Auto Pause System is also effective when the camcorder is pointed up, or is positioned upside down.*
- *Auto Pause also works when the camcorder is twisted by a large degree to the left or right.*
- *When you want to shoot in any of the aforementioned positions, be sure to switch off Auto Pause.*

FEATURE: **Quick Rec**

PURPOSE: To record a scene for 5 seconds, providing quick scene transitions like those seen in TV programmes.

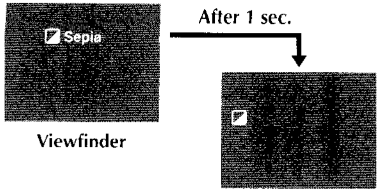
OPERATION: **1)** During Record–Standby, press and release **QUICK REC**. Recording starts, and after 5-second recording is finished, the camcorder reenters the Record–Standby mode automatically.

- To continue shooting longer than 5 seconds, press and hold **QUICK REC**. Recording continues as long as **QUICK REC** is kept pressed.

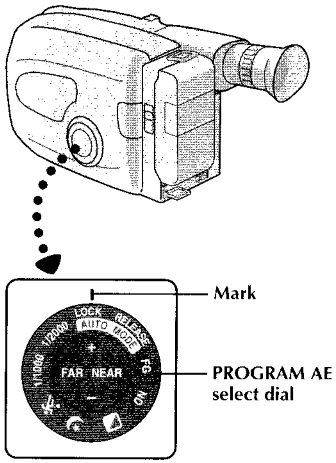
NOTES:

- *The Fade/Wipe (☞ pg. 19) cannot be activated by pressing **QUICK REC**.*
- ***QUICK REC** cannot be used during Animation and Time-Lapse (☞ pg. 27).*

1 second later, the mode is activated.



Viewfinder



Programme AE With Special Effects

All you have to do to access any of the variety of shooting effects is to turn the PROGRAM AE select dial.

1 SELECT MODE

Turn the PROGRAM AE select dial until the symbol of the function you want is aligned with the mark.

- The selected mode's name and its indication are displayed in the viewfinder for approx. 1 second. Then the name disappears, and only the indication remains. The mode is activated.
- When Auto Mode Lock or Auto Mode Release mode is selected, only the mode's name is displayed. Then the name disappears and the mode is activated.

NOTES:

- *Only one effect can be engaged at a time.*
- *The screen becomes slightly reddish when the Fade/Wipe (☞ pg. 19) is used in the Sepia mode.*
- *The screen becomes slightly dark in the High Speed Shutter mode. Use in well-lighted situations.*
- *In the High Speed Shutter or Sports modes, picture colour may be adversely affected if subject is lit by alternating discharge-type light sources such as flourescent or mercury-vapour lights.*

DIAL SYMBOL	VIEWFINDER INDICATION	MODE
LOCK	Auto Lock	Auto Mode Lock

Auto Mode Lock
Locks the camcorder in Full Auto mode, preventing incorrect operation due to accidental button pressing during shooting.

- In this mode the following controls are disabled; Fade/Wipe, Wide, Title, Display, M.W.B. (Manual White Balance), Manual Focus, Focus Lock, Exposure Control and MENU.

RELEASE	Auto Release	Auto Mode Release

Auto Mode Release
Re-enables the controls that were disabled by Auto Mode Lock.

FG	FG : Fog	Electronic Fog Filter

Electronic Fog Filter
Makes the picture look misty white, as when an external fog filter is attached to the lens. Softens the image and gives it a "fancy" look.

ND	ND : ND Effect	ND Effect

ND Effect
A black mist darkens the picture, as when an ND filter is used. Helps to counter the effects of glare on the subject.

◪	◪ Sepia	Sepia

Sepia
The scene being shot is recorded in sepia-tinted (reddish-brown) monochrome, giving the effect of an older movie. Use together with Wide (☞ pg. 20) for the authentic look of a classic Hollywood movie.

DIAL SYMBOL	VIEWFINDER INDICATION	MODE
☾	☾ Twilight	Twilight

Twilight
Dusk, twilight scenery, fireworks, etc., look more natural and dramatic. The following happens when Twilight mode is selected:

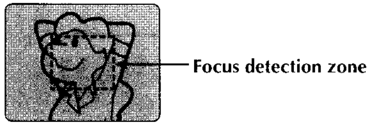
- Auto gain control is turned off.
- White Balance is set to "☀" (outdoor mode), but can also be manually changed to another mode (☞ pg. 23).
- Auto Focus becomes available only in the range of 10 m to infinity. To focus when the subject-to-camera distance is less than 10 m, use manual focusing (☞ pg. 17).

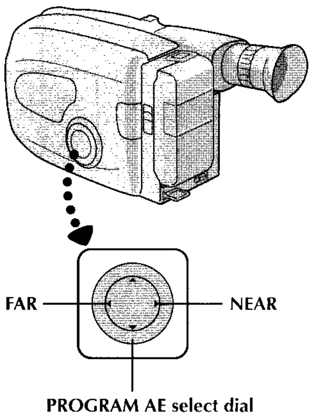
🏃	🏃 Sports	Sports

Sports
High shutter speed clearly captures fast-moving action.

1/1000	🏃 1 S 1/1000	1/1000 sec. High Speed Shutter
1/2000	🏃 2 S 1/2000	1/2000 sec. High Speed Shutter

High-Speed Shutter (1/1000s., 1/2000s.)
Captures faster action than Sports mode.





Focusing

Auto Focus

The camcorder's Full Range AF system offers continuous shooting ability from close-up to infinity. However, correct focus may not be obtainable in the situations listed below (in these cases use manual focusing):

- When two subjects overlap in the same scene.
- When illumination is low.*
- When the subject has no contrast (difference in brightness and darkness), such as a flat, one-colour wall, or a clear, blue sky.*
- When a dark object is barely visible in the viewfinder.*
- When the scene contains minute patterns or identical patterns that are regularly repeated.
- When the scene is affected by sunbeams or light reflecting off the surface of a body of water.
- When shooting a scene with a high-contrast background.

* The low-contrast warning "▲▲" appears in the viewfinder.

Focus Lock

This feature locks the focus in place, which is especially helpful in the following situations:

- When things pass between your subject and the camcorder. Engage the focus lock function to lock your subject in before recording.
- When you want your subject to be focused, and to appear in a corner of the screen. First, center on the subject and focus using auto focus mode. Then engage the focus lock function and move the camcorder until the subject is where you want it.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 LOCK FOCUS

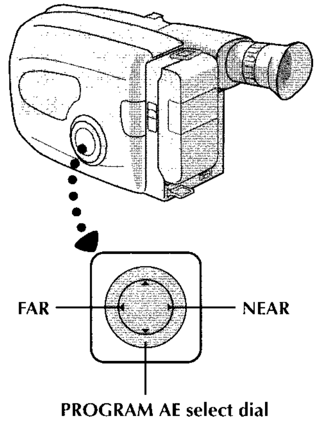
Press **FAR** or **NEAR**. The focus lock indication "▲▲" appears in the viewfinder.

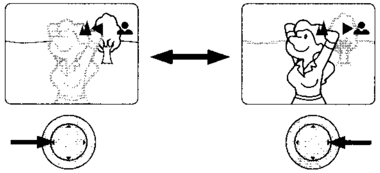
3 RELEASE FOCUS LOCK

Press **FAR** and **NEAR** simultaneously. The focus lock indication disappears.

NOTES:

- *If the lens is smeared or blurred, accurate focusing is not possible. Keep the lens clean, wiping with a piece of soft cloth if it gets dirty. When condensation occurs, wipe with a soft cloth or wait for it to dry naturally.*
- *When shooting a subject close to the lens, zoom-out first (☞ pg. 12). If zoomed-in in the auto focus mode, the camcorder could automatically zoom out depending on the distance between the camcorder and the subject. *When Tele Macro (☞ pg. 25) is activated, the camcorder will not zoom out automatically.*





Manual Focus

NOTE:

You should already have made the necessary viewfinder adjustments (☞ pg. 6). If you haven't, do so before continuing.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 ADJUST FOCUS

To farther subject . . .

Press and hold **FAR**. The Manual Focus indications "▲◀ ▲" appear and "◀" blinks.
Go to step **3**.

To nearer subject . . .

Press and hold **NEAR**. The Manual Focus indications "▲ ▶▲" appear and "▶" blinks.
Go to step **3**.

3 LOCK FOCUS

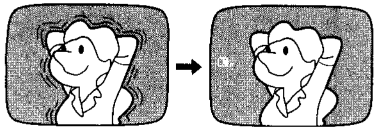
Release **FAR** or **NEAR**. The focus indication is replaced by the focus lock indication "▲▲" and the adjusted focus is locked in.

4 RELEASE MANUAL FOCUS MODE

Press **FAR** and **NEAR** simultaneously. The Manual Focus mode is immediately released and the focus lock indication disappears.

NOTES:

- *Be sure to focus the lens in the maximum telephoto position when you use the Manual Focus mode. If you focus in on a certain subject in the wide-angle position, sharply focused images cannot be obtained when zoomed up because the depth-of-field is reduced at longer focal lengths.*
- *When the focus level cannot be adjusted any farther or closer, "▲" or "▲" will blink.*



Picture Stabilizer

This feature compensates for unstable images caused by camera-shake, particularly noticeable at high magnification.

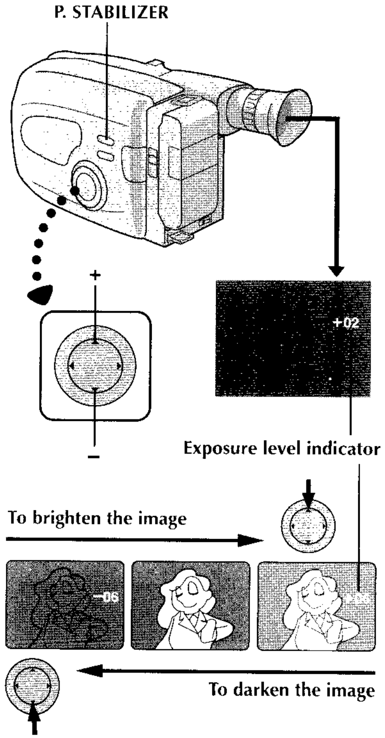
1 ACTIVATE PICTURE STABILIZER

Press **P.STABILIZER**. "⦾" appears in the viewfinder.

- To switch off the Picture Stabilizer, press **P.STABILIZER**. The indicator disappears.

NOTES:

- *Accurate stabilization may not be possible if hand shake is excessive, or under the following conditions:*
  - *When shooting subjects with vertical or horizontal stripes*
  - *When shooting dark or dim subjects*
  - *When shooting subjects with excessive backlighting*
  - *When shooting scenes with movement in various directions*
  - *When shooting scenes with low-contrast backgrounds*
- *Switch off Picture Stabilizer when recording with the camcorder on a tripod.*



Exposure Control

This feature automatically adjusts the iris for the best available picture quality, but you can override and make the adjustment manually.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 BRIGHTEN IMAGE

Press + (maximum +06). The Exposure level indicator appears in the viewfinder.

OR . . .

DARKEN IMAGE

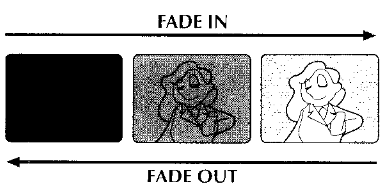
Press – (maximum –06). The Exposure level indicator appears in the viewfinder.

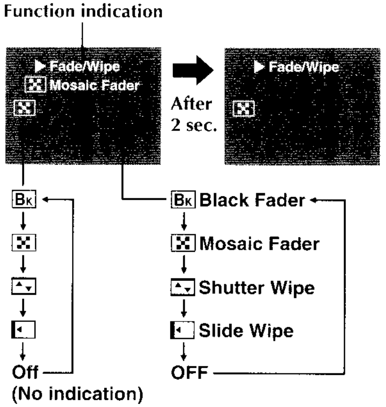
When you want to return to the factory setting . . .

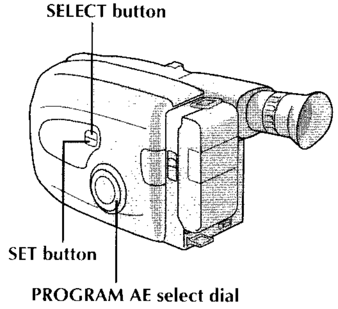
3 RESTORE INITIAL SETTING

Press + and – simultaneously. The standard setting is immediately restored and the Exposure level indicator disappears.

[Ex. : Black Fader]







NOTES:

- *Pressing and holding the Recording Start/Stop button allows you to record a black blank screen, or a mosaic pattern if Mosaic Fader is selected.*
- *The screen becomes slightly reddish when the Fade/Wipe is used with Sepia (☞ pg. 15).*

Fade/Wipe

These effects let you make pro-style scene transitions. Fade- or wipe-in works at recording start, and fade- or wipe-out works at recording end or when you enter Record–Standby mode.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 SELECT FUNCTION

Press **SELECT** repeatedly until "**▶Fade/Wipe**" appears.

3 ENGAGE FADE- OR WIPE-STANDBY MODE

Press **SET** to cycle through the modes as shown at left. Once the desired mode appears, it is selected and reserved.

- The selected mode's name and its indication are displayed in the viewfinder for approx. 2 seconds. Then the name disappears, and only the indication remains.

4 START RECORDING

Press Recording Start/Stop to start recording and activate fade- or wipe-in.

OR . . .

END RECORDING

Press Recording Start/Stop to end recording and engage fade- or wipe-out.

5 TO CANCEL FADE- OR WIPE-STANDBY MODE

While "**▶Fade/Wipe**" is displayed, press **SET** twice.

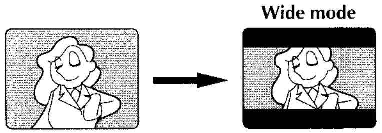
- "OFF" is displayed for approx. 2 seconds and the reserved fade or wipe is cancelled.

Bk Black Fader
Fades in/out to a black screen.

▦ Mosaic Fader
Gradually turns/returns the picture into/from a mosaic pattern.

▲▼ Shutter Wipe
A black screen moves in from the top and bottom, closing over the image like a shutter, or a new image pushes open the black screen vertically from the centre.

◂ Slide Wipe
A black screen moves in from the left to gradually cover the image, or a new image moves in from right to left.



Wide

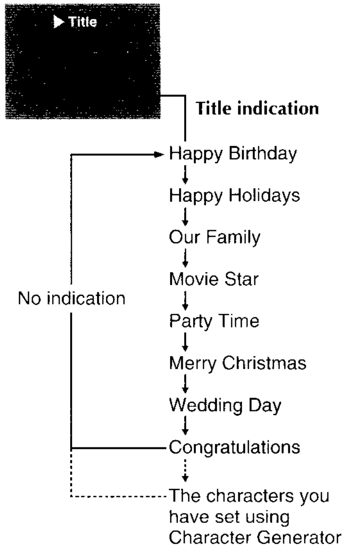
This feature allows you to record black bars at the top and bottom of the screen to produce a cinema-like "wide-screen" effect.

1 SELECT MODE
Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 SELECT FUNCTION
Press **SELECT** repeatedly until "**▶Wide**" appears.

3 ENGAGE WIDE MODE
Press **SET**.

4 RESTORE NORMAL SCREEN
Press **SET** again while "**▶Wide**" appears.



Instant Titles

The camcorder has eight preset titles in memory. You can superimpose one of them above a previously stored title as shown in the illustration to the left.

DISPLAY

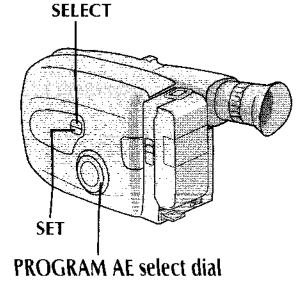
1 SELECT MODE
Turn the PROGRAM AE select dial to any position except AUTO LOCK.

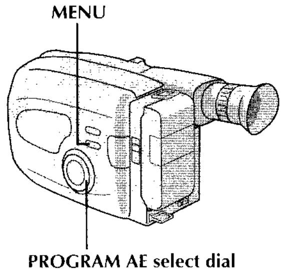
2 SELECT FUNCTION
Press **SELECT** repeatedly until "**▶Title**" appears.

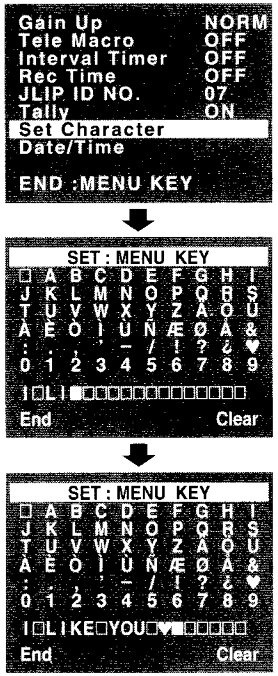
3 SELECT PRESET TITLE
Engage the Record-Standby mode, then press **SET** to cycle through the preset titles until the desired title is displayed.

NOTES:

- *To delete the Instant Titles during recording, press **SELECT** repeatedly until "**▶Title**" appears then press **SET**.*
- *To recall a title, press **SET** again.*







Gain Up NORM
Tele Macro OFF
Interval Timer OFF
Rec Time OFF
JLIP ID NO. 07
Tally ON
Set Character
Date/Time

END :MENU KEY

SET : MENU KEY
□ A B C D E F G H I
J K L M N O P Q R S
T U V W X Y Z Ä Ö Ü
À È Ò Ì Ù Ñ Æ Ø Å &
: . , ' – / ! ? ¿ ♥
0 1 2 3 4 5 6 7 8 9
I□LI■□□□□□□□□□□□□□
End Clear

SET : MENU KEY
□ A B C D E F G H I
J K L M N O P Q R S
T U V W X Y Z Ä Ö Ü
À È Ò Ì Ù Ñ Æ Ø Å &
: . , ' – / ! ? ¿ ♥
0 1 2 3 4 5 6 7 8 9
I□LIKE□YOU□♥■□□□□□
End Clear

Character Generator

You can enter an original title of up to 18 characters.

1 ACCESS MENU SCREEN
Turn the PROGRAM AE select dial to any position except AUTO LOCK, then press **MENU**.

2 ACCESS CHARACTER SET MENU
Press + or – to move the highlight bar to "Set Character", then press **NEAR**. The Character Set menu appears.

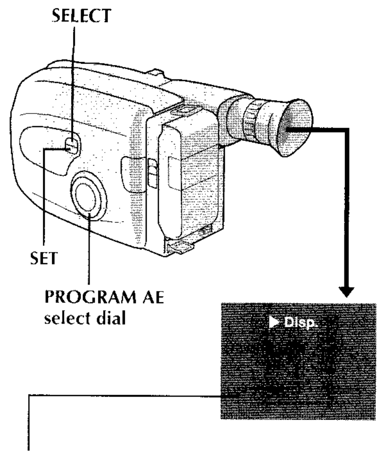
3 INPUT CHARACTERS
Press +, –, **FAR** or **NEAR** to make the desired character blink, then press **MENU**. The selected characters appear at the bottom of the screen. Repeat as many times as desired (max. 18).

- To select the location of the next character, press +, –, **FAR** or **NEAR** to make the row of squares blink at the bottom of the screen, then press **FAR** or **NEAR** to move the blinking cursor underneath the desired location. Press + when you're done, and the blinking cursor returns to the character grid.

4 END CHARACTER SETTING
Press +, –, **FAR** or **NEAR** to make "End" blink, then press **MENU** twice to return to the normal screen.

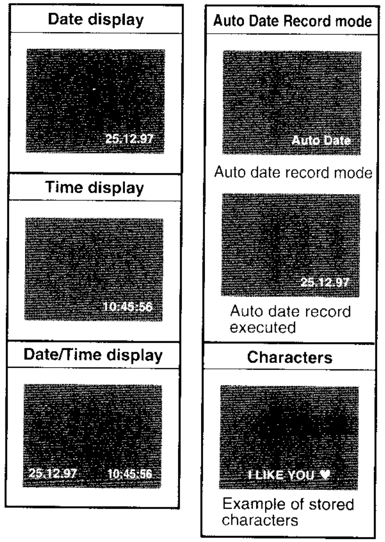
NOTES:

- *To erase a character you entered mistakenly, make "Clear" blink by pressing **+**, **–**, **FAR** or **NEAR**, then press **MENU**. All characters are deleted at once. Or, to erase selected characters only, first move the blinking cursor to the character at the bottom row which you want to replace, then press **+**, **FAR** or **NEAR** to highlight "□" in the top left corner, and then press **MENU**.*
- *To display the characters you have set — "Instant Titles" (☞ pg. 20) or "Date/Time/Character Insert" (☞ pg. 22).*
- *Characters may be set only in the Record-Standby mode.*



Date display → Time display → Date/Time display → Auto Date Record mode → Date-off mode (No indication) → Date display

The characters you have set using Character Generator



Date/Time Character Insert

This feature allows you to display date, time and characters in your viewfinder and on a connected color monitor, record them manually or automatically, and even make your own titles.

NOTE:

You should already have performed the Date/Time Setting procedure (☞ pg. 7). If you haven't, do so before continuing.

DISPLAY

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 SELECT DISPLAY

Press **SELECT** repeatedly until "**▶Disp.**" appears.

3 CHOOSE DISPLAY MODE

Press **SET** while in Record-Standby to cycle through the modes as shown in the illustration at left.

NOTES:

- *The selected display can be recorded.*
- *If you don't want to record the display, select Date-off mode before shooting.*
- *If you want to delete the display during shooting, press **SELECT** repeatedly until "**▶Disp.**" appears then press **SET**.*
- *To recall the display, press **SET** again.*

AUTO DATE RECORD

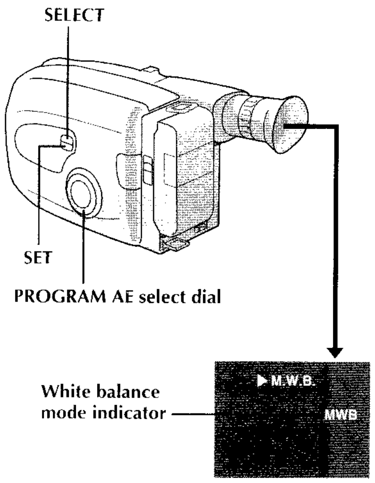
Your camcorder automatically records the date for about 5 seconds after recording is initiated in the following situations:

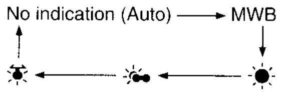
- After changing the date.
- After loading a cassette.
- After Auto Date Record mode is selected by pressing **SET**.

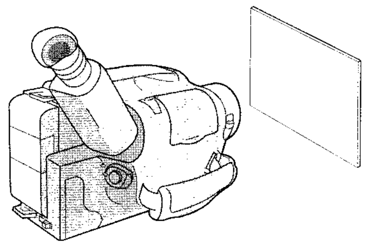
In this mode, the date is replaced after 5 seconds with "Auto Date".

NOTES:

- *Setting **PROGRAM AE** to LOCK always engages the Auto Date Record mode, and disables all other modes.*
- *In the Auto Date Record mode, if the date changes while you're shooting, the date indication is recorded for about 5 seconds from that point. It is not recorded during any other recordings made on that day.*







Manual White Balance Adjustment (M.W.B.)

This camcorder's Automatic Colour Temperature system senses the colour temperature of the ambient lighting for automatic white balance adjustment. However, precise colour adjustment is not possible under the following conditions:

- When an object is in various shades of the same colour.
- When a predominantly red or brown object is being shot outdoors.

In these cases, use the camcorder's built-in preset filters for white balance adjustment.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 SELECT FUNCTION

Press **SELECT** reapeatedly until "**▶M.W.B.**" appears.

3 SELECT WHITE BALANCE

Press **SET** (Manual White Balance) until the required indication appears in the viewfinder.

"MWB" ..... With a memorized personal White Balance setting (see below)
"☀" .... Outdoors on sunny day
"⛅" .... Outdoors on cloudy day
"✲" .... Light source is halogen or tungsten lamp

MWB

MWB sets the colour temperature for the subject's light source so you can shoot with natural colours that are unaffected by surroundings, even when there are multiple subjects with different colour temperatures.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 ADJUST FOCUS

Point the camcorder at a white, flat object such as a sheet of white paper, and adjust focus manually (☞ pg. 17).

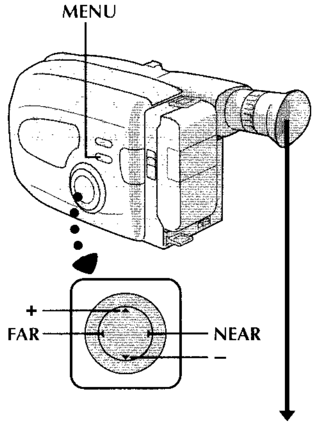
3 ADJUST WHITE BALANCE

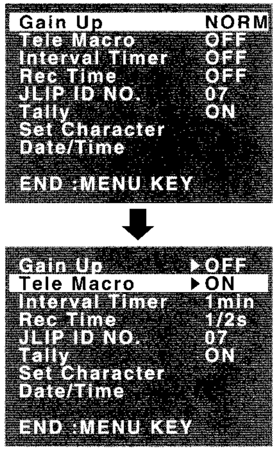
Press **SET** until "MWB" appears, then press and hold **SET** for more than 3 seconds.

- "MWB" blinks in the viewfinder during adjustment, then stops blinking but stays lit when adjustment is complete.

NOTES:

- *To switch to automatic white balance adjustment, press **SET** until the indication disappears, or turn the PROGRAM AE select dial to "AUTO LOCK".*
- *Re-adjust the White Balance when the lighting has changed, when the camcorder has been turned off and on again, or when the PROGRAM AE select dial's position has been changed.*
- *It is helpful to connect your camcorder to a colour monitor when adjusting the white balance ("Basic Connections" ☞ pg. 28).*
- *When adjusted by putting coloured paper in front of the subject in step **2** ("ADJUST FOCUS"), this unit makes its colour temperature standard for automatic white balance. So you can enjoy shooting with different colours. For example, when adjusting with red, blue or yellow colours, the image becomes the colour which aproximates to green, orange or purple respectively.*



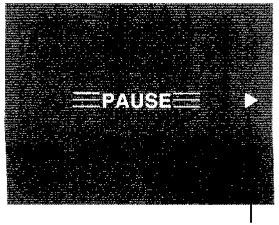


```
Gain Up          NORM
Tele Macro       OFF
Interval Timer   OFF
Rec Time         OFF
JLIP ID NO.      07
Tally            ON
Set Character
Date/Time

END :MENU KEY
```

```
Gain Up          ▸OFF
Tele Macro       ▸ON
Interval Timer   1min
Rec Time         1/2s
JLIP ID NO.      07
Tally            ON
Set Character
Date/Time

END :MENU KEY
```



If "Gain Up" or "Tele Macro" in the Menu has been changed from the factory settings, this mark appears in the viewfinder.

Using Menu For Detailed Adjustment

This camcorder is equipped with Program Manager, an easy-to-use, on-screen menu system that simplifies many of the more detailed camcorder settings.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 ACCESS MENU SCREEN

Press **MENU**.

3 SELECT FUNCTION

Press **+** or **–** to place the highlight bar on the desired function.

4 MAKE SETTING

The setting procedure depends on the function you select.

If you select Gain Up, Tele Macro, Interval Timer, Rec Time, JLIP ID NO. or Tally. . . .

.... press **FAR** or **NEAR** to cycle through the choices until the desired setting appears.

If you select Set Character or Date/Time, . . .

.... press **NEAR** to access the selection menu for each function (Set Character – ☞ pg. 21; Date/Time – ☞ pg. 7).

5 CLOSE MENU

Press **MENU**. The normal screen reappears.

NOTE:

The menu is available only in the Record-Standby mode.

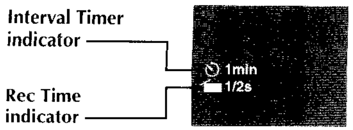
MENU

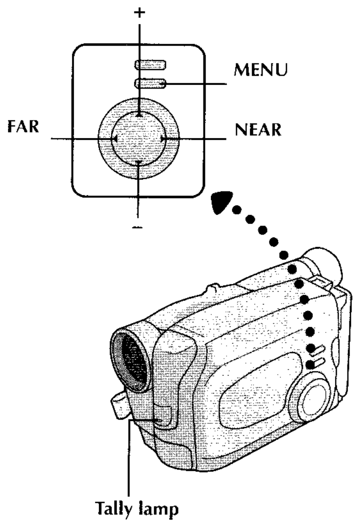
Gain Up	NORM	To record a subject in a dimly lit environment. When it is more convenient to shoot with a less coarse picture although the subject becomes slightly dark.
	▶ OFF	Allows you to shoot dark scenes with no picture brightness adjustment.
Tele Macro	OFF	Usually set to this position.
	▶ ON	Usually the distance to a subject where the lens is in focus depends on the zoom magnification. Unless there is a distance more than 1m to the subject, the lens is out of focus at the maximum telephoto setting. When set to "ON", you can shoot a subject as large as possible at a distance of approx. 60 cm. • Depending on the zoom position, the lens may go out of focus.
Interval Timer	OFF 15s 30s 1min 5min	This feature allows you to set the parameters for Self-Timer (☞ pg. 26) and Time-Lapse recording (☞ pg. 27).
Rec Time	OFF 1/4s 1/2s 1s 5s	This feature allows you to set the parameters for Animation and Time-Lapse recording (☞ pg. 27).
JLIP ID NO.	This number is necessary when connecting the camcorder to a device such as a computer using the J terminal (JLIP). (☞ pg. 45) The numbers range from 01 to 99. Factory setting is 07.	
Tally	ON	The tally lamp comes on to signal the start of recording.
	OFF	The tally lamp remains off at all times.
Set Character	Allows you to input characters. (☞ pg. 21).	
Date/Time	Allows you to set the current date and time (☞ pg. 7).	

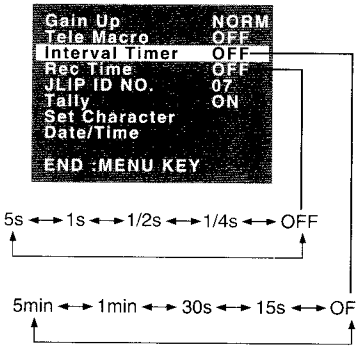
▨ **= Factory setting and when the PROGRAM AE Select Dial is set to AUTO LOCK**

NOTE:

During shooting in low light, Auto Focus accuracy may decrease even when Gain Up is used. In this case, use Manual Focus (☞ pg. 17).







```
Gain Up          NORM
Tele Macro       OFF
Interval Timer   OFF
Rec Time         OFF
JLIP ID NO.      07
Tally            ON
Set Character
Date/Time

END :MENU KEY
```

Self-Timer

You can set the delay between pressing **Recording Start/Stop** and the actual start of recording. If you secure the camcorder, you (or whomever is operating the camcorder) can enter the scene before recording starts.

NOTE:

Make sure the camcorder is in the Record-Standby mode before performing the following steps.

1 ACCESS MENU SCREEN

Turn the PROGRAM AE select dial to any position except AUTO LOCK, then press **MENU**.

2 SET INTERVAL TIME

Press – or + to move the highlight bar down to "**Interval Timer**", then press **FAR** or **NEAR** to cycle through the choices. Stop when the desired time appears. Choose from "15s", "30s", "1min", "5min", or select to turn the function "OFF".

3 CLOSE MENU

Press **MENU**.

4 START DELAYED RECORDING

Press **Recording Start/Stop**. The tally lamp begins blinking, and the blinking frequency increases about 5 seconds before recording is to start. Once recording begins, the lamp stops blinking but stays lit.

To Release Self-Timer . . .

..... while the tally lamp is blinking, press **Recording Start/Stop** to stop the blinking, then set "**Interval Timer**" to "OFF".

Animation

Give stationary scenes or objects an illusion of movement. This function allows you to shoot a series of pictures, each slightly different, of the same object for a brief period of time.

NOTE:

Make sure the camcorder is in the Record-Standby mode before performing the following steps.

1 ACCESS MENU SCREEN

Turn the PROGRAM AE select dial to any position except AUTO LOCK, then press **MENU**.

2 SET RECORDING TIME

Press – or + to move the highlight bar down to "**Rec Time**", then press **FAR** or **NEAR** to cycle through the choices. Stop when the desired time appears. Choose from "1/4s", "1/2s", "1s", "5s", or select to turn the function "OFF". Then press **MENU** to close Menu screen.

3 START RECORDING

Press the Recording Start/Stop button after focusing on the subject. The recording stops automatically after the selected period of time.

4 ASSEMBLE SERIES OF PICTURES

Repeat step **3** for the desired number of pictures.

5 RELEASE ANIMATION MODE

Set "**Rec Time**" in the Menu screen to "OFF".

NOTES:

- *For best results, make sure the camcorder is secured when shooting in Animation or Time-Lapse mode.*
- *Fade/Wipe-in/out cannot be performed during Animation or Time-Lapse shooting.*
- *Before performing other operations following Animation or Time-Lapse recording, make sure the Animation or Time-Lapse mode is deactivated.*

Time-Lapse

You can record sequentially at preset time spans. Leaving the camcorder aimed at a specific subject, you can record subtle changes over an extended period of time.

NOTE:

Make sure the camcorder is in the Record-Standby mode before performing the following steps.

1 ACCESS MENU SCREEN

Turn the PROGRAM AE select dial to any position except AUTO LOCK, then press **MENU**.

2 SET INTERVAL BETWEEN RECORDINGS

Press – or + to move the highlight bar down to "**Interval Timer**", then press **FAR** or **NEAR** to cycle through the choices. Stop when the desired time appears. Choose from "15s", "30s", "1min", "5min", or select to turn the function "OFF".

3 SET RECORDING TIME

Press – or + to move the highlight bar down to "**Rec Time**", then press **FAR** or **NEAR** to cycle through the choices. Stop when the desired time appears. Choose from "1/4s", "1/2s", "1s", "5s", or select to turn the function "OFF". Then press **MENU** to close Menu screen.

4 START TIME-LAPSE RECORDING

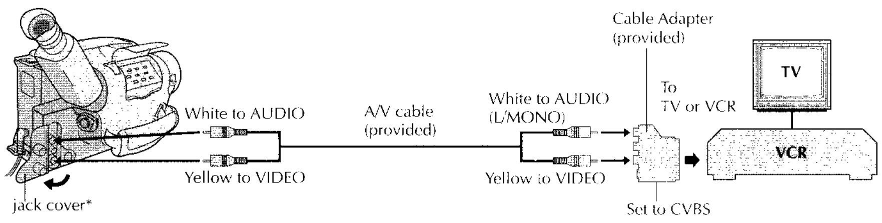
Press the Recording Start/Stop button. Recording and intervals alternate automatically.

5 RELEASE TIME-LAPSE MODE

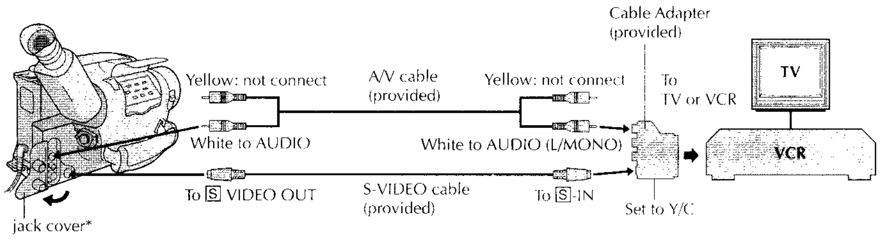
To release when the tally lamp is not blinking, set "**Rec Time**" and "**Interval Timer**" in the Menu screen to "OFF". To release when the tally lamp is blinking, press the Recording Start/Stop button to stop the blinking, then set "**Interval Timer**" and "**Rec Time**" in the Menu screen to "OFF".

These are some basic types of connections. When making the connections, refer also to your VCR and TV instruction manuals.

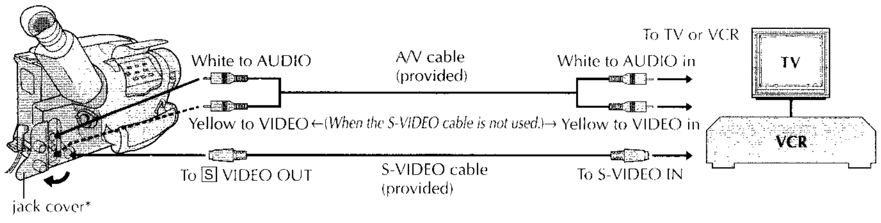
A. Connection To a TV or VCR equipped with a SCART connector compatible only with regular video signal


Cable Adapter (provided)
White to AUDIO
A/V cable (provided)
White to AUDIO (L/MONO)
To TV or VCR
TV
VCR
Yellow to VIDEO
Yellow to VIDEO
jack cover*
Set to CVBS

B. Connection To a TV or VCR equipped with a SCART connector compatible with Y/C signal


Cable Adapter (provided)
Yellow: not connect
A/V cable (provided)
Yellow: not connect
To TV or VCR
TV
White to AUDIO
White to AUDIO (L/MONO)
VCR
To S VIDEO OUT
S-VIDEO cable (provided)
To S-IN
Set to Y/C
jack cover*

C. Connection To a TV or VCR equipped with an S-VIDEO IN and/or A/V input (RCA type) connectors


To TV or VCR
White to AUDIO
A/V cable (provided)
White to AUDIO in
TV
Yellow to VIDEO←(When the S-VIDEO cable is not used.)→ Yellow to VIDEO in
VCR
To S VIDEO OUT
S-VIDEO cable (provided)
To S-VIDEO IN
jack cover*

*jack cover: When connecting the cables, open the jack cover.

A: Connection to a TV or VCR equipped with a SCART connector compatible only with regular video signals

NOTE:

Use the provided A/V cable and cable adapter.

1 CONNECT CAMCORDER TO TV/VCR

As shown in the illustration at left, connect the A/V cable to the AUDIO and VIDEO connectors on the camcorder and to those on the cable adapter, and then connect the cable adpter to the SCART connector on the VCR or TV.

2 SET "Y/C"/"CVBS" SWITCH

Set the "Y/C"/"CVBS" video out select switch on the cable adapter to "CVBS".

3 SUPPLY POWER

Turn on the camcorder, VCR and TV.

4 SELECT MODE

Set the VCR to its AUX input mode, and set the TV to its VIDEO mode.

B: Connection to a TV or VCR equipped with a SCART connector compatible with Y/C signals

NOTE:

Use the Provided S-VIDEO cable, A/V cable and cable adapter.

1 CONNECT CAMCORDER TO TV/VCR

As shown in the illustration at left, connect the S-VIDEO cable and the A/V cable to the S-VIDEO and AUDIO connectors on the camcorder and to those on the cable adapter, and then connect the cable adapter to the SCART connector on the VCR or TV.

2 SET "Y/C"/"CVBS" SWITCH

Set the "Y/C"/"CVBS" video out select switch on the cable adapter to "Y/C".

3 SUPPLY POWER

Turn on the camcorder, VCR and TV.

4 SELECT MODE

Set the VCR to its AUX input mode, and set the TV to its VIDEO mode.

C: Connection to a TV or VCR equipped with an S-VIDEO IN and/or A/V input (RCA type) connectors

NOTE:

Use the provided A/V cable and S-VIDEO cable.

1 CONNECT CAMCORDER TO TV/VCR

As shown in the illustration at left, connect the S-VIDEO cable and/or the A/V cable to the S-VIDEO (or the VIDEO) and AUDIO connectors on the camcorder and to those on the VCR or TV.

2 SUPPLY POWER

Turn on the camcorder, VCR and TV.

3 SELECT MODE

Set the VCR to its AUX input mode, and set the TV to its VIDEO mode.

D: Connection to a TV with NO A/V Input Connectors (Playback ONLY)

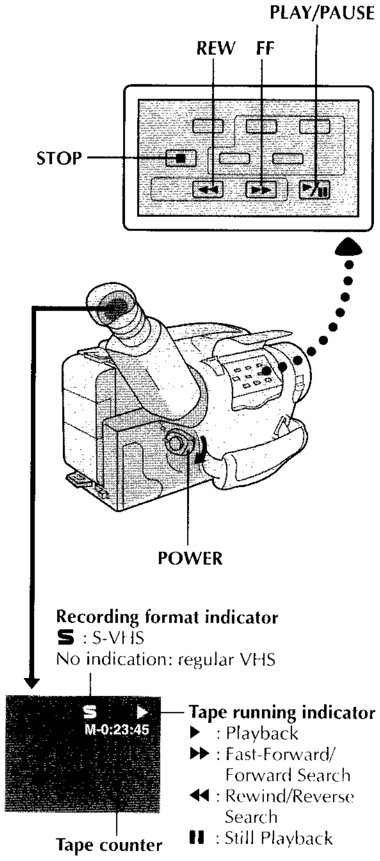
NOTE:

Use the optional RF-V5E RF unit.
Connect it to the camcorder's VIDEO, AUDIO and RF DC OUT connectors.

* Refer to the RF-V5E instruction manual for the connection procedure.

NOTES:

- *It is recommended to use the AC Power Adapter/Charger as the power supply instead of the battery pack.*
- *To monitor the picture and sound from the camcorder without inserting a tape, set the camcorder's Power switch to "CAMERA", then set your TV to the appropriate input mode.*
- *If you have a TV or speakers that are not specially shielded, do not place the speakers adjacent to the TV as interference will occur in the camcorder playback picture.*


PLAY/PAUSE
REW
FF
STOP
POWER
Recording format indicator
S : S-VHS
No indication: regular VHS
S ▶
M-0:23:45
Tape running indicator
▶ : Playback
▶▶ : Fast-Forward/ Forward Search
◀◀ : Rewind/Reverse Search
❚❚ : Still Playback
Tape counter

NOTE:

Make sure you connect your camcorder as directed in "Basic Connections" (☞ pg. 28).

1 LOAD A CASSETTE

Slide **EJECT** to open the cassette holder, then insert the cassette with the label facing out. Press **PUSH** to ensure the holder is closed and locked.

2 SELECT MODE

Set the Power switch to "PLAY". The Power On indicator lights.

3 PLAYBACK

Press **PLAY/PAUSE**. The playback picture appears in the viewfinder and the connected TV.

4 STOP PLAYBACK

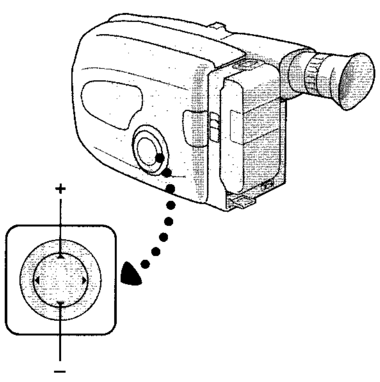
Press **STOP**.

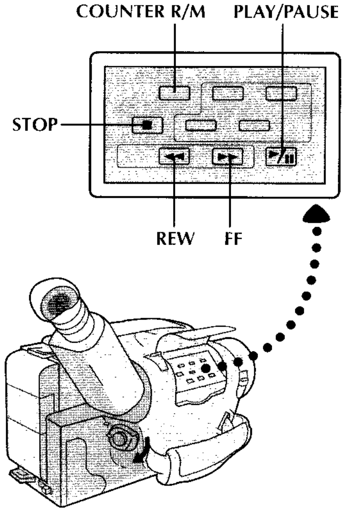
Rewind or Fast-forward the tape

Press **REW** to rewind, or **FF** to fast-forward the tape during Stop mode.

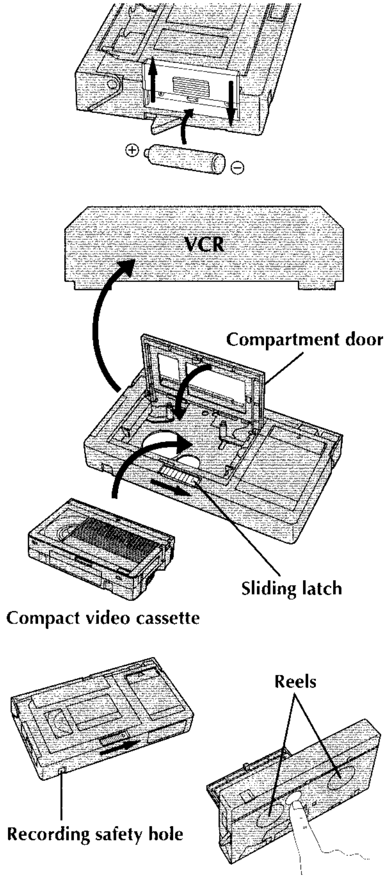
NOTE:

The camcorder shuts off automatically after about 5 minutes in Stop mode or Still Playback mode. To turn on again, set the Power switch to "POWER OFF", then to "PLAY".




COUNTER R/M
PLAY/PAUSE
STOP
REW
FF

FEATURE:	**Manual Tracking**
PURPOSE:	To eliminate noise bars that appear on the screen during playback.
OPERATION:	1) Press either **+/–** button as many times as necessary for best picture.
NOTES:	● *To reset TRACKING to the original preset, press both + and – buttons simultaneously.* ● *Manual Tracking may not work with tapes recorded on other VCRs or camcorders.*
FEATURE:	**Still Playback**
PURPOSE:	To pause during playback.
OPERATION:	1) Press **PLAY/PAUSE** during playback. 2) To resume normal playback, press **PLAY/PAUSE** again.
NOTE:	*Noise bars appear and pictures may become monochrome during Still Playback. This is normal.*
FEATURE:	**Shuttle Search**
PURPOSE:	To allow high-speed search in either direction.
OPERATION:	***Forward Search*** 1) Press **FF** during playback. ***Reverse Search*** 1) Press **REW** during playback.
NOTE:	*Noise bars appear and pictures may become monochrome or darken in Shuttle Search. This is normal.*
FEATURE:	**Counter Memory Function**
PURPOSE:	To make it easier to locate a specific tape segment.
OPERATION:	1) Press **COUNTER R/M** and hold for more than 2 seconds. The counter resets to "0:00:00". 2) Press **COUNTER R/M**. "M" appears. 3) After recording or playback, press **STOP**, then **REW**. The tape automatically stops at or close to 0:00:00. 4) Press **PLAY/PAUSE** to start playback.
NOTES:	● *The counter memory functions in the FF and REW modes.* ● *To disable Counter Memory Function, press **COUNTER R/M** so the "M" disappears.*


VCR
Compartment door
Sliding latch
Compact video cassette
Reels
Recording safety hole

Cassette Adapter

Use this to play back a S-VHS-C/VHS-C video cassette recorded with this camcorder. It is fully compatible with any S-VHS/VHS video cassette recorder. The C-P7U adapter is battery powered and automatically performs tape loading and unloading.

1 INSERT BATTERY

Slide the battery cover up to remove it, and install one "R6(AA)" size battery as shown in the illustration at left. Then reattach the cover.

2 INSERT CASSETTE IN ADAPTER

Slide the latch to open the adapter compartment door, then insert the cassette and close the compartment door.

3 PLAY BACK ON CONNECTED VCR

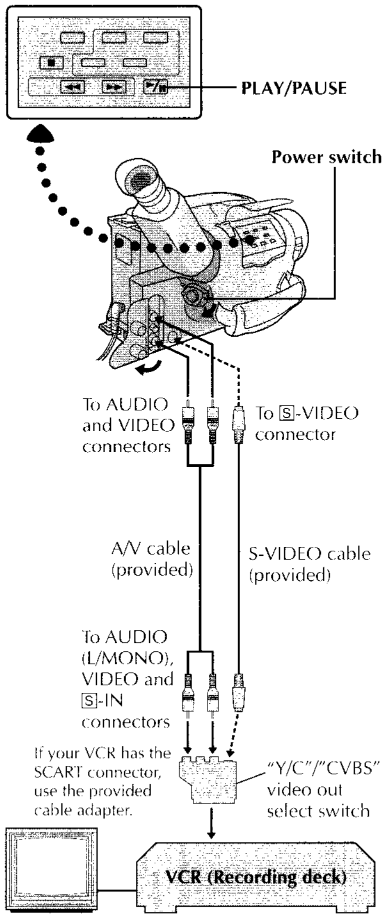
Load the cassette adapter into the VCR and play the tape back as you would any other.

4 REMOVE CASSETTE FROM ADAPTER

Slide the latch and the compartment door opens automatically. Then insert your finger in the hole on the underside of the adapter as shown in the illustration at left, push up and remove the cassette.

NOTES:

- *During tape loading and unloading, do not touch the reels for safety and tape protection.*
- *Tapes recorded in S-VHS cannot be played back on regular VHS VCRs.*
- *During special-effect playback (slow motion, still frame, etc.), the picture may vibrate or noise bars may appear on the screen.*
- *To record on a VCR using a compact cassette and the adapter, cover the adapter's recording safety hole with adhesive tape.*


PLAY/PAUSE
Power switch
To AUDIO and VIDEO connectors
To S-VIDEO connector
A/V cable (provided)
S-VIDEO cable (provided)
To AUDIO (L/MONO), VIDEO and S-IN connectors
If your VCR has the SCART connector, use the provided cable adapter.
"Y/C"/"CVBS" video out select switch
VCR (Recording deck)

Tape Dubbing

1 CONNECT EQUIPMENT

Following the illustration at left, connect the camcorder and the VCR. (refer also to page 28 and 29)

2 PREPARE FOR DUBBING

Set the camcorder's Power switch to "PLAY", turn on the VCR's power, and insert the appropriate cassettes in the camcorder and the VCR.

3 SELECT VCR MODE

Engage the VCR's AUX and Record-Pause modes.

4 FIND EDIT-IN POINT

Engage the camcorder's Play mode to find a spot just before the edit-in point. Once it's reached, press **PAUSE** on the camcorder.

5 START EDITING

Press **PLAY** on the camcorder and engage the VCR's Record mode.

6 STOP EDITING TEMPORARILY

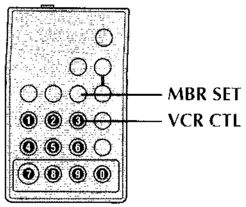
Engage the VCR's Record-Pause mode and press **PAUSE** on the camcorder.

7 EDIT MORE SEGMENTS

Repeat steps **4** through **6** for additional editing, then stop the VCR and camcorder when finished.

NOTES:

- *If your VCR has an S-VIDEO input connector or a SCART connector compatible with Y/C signals, connect the camcorder and the VCR using the provided S-VIDEO cable. This can improve the dubbed picture quality.*
- *If you use the provided cable adapter, set the "Y/C"/"CVBS" video out select switch as required.*
  Y/C : When connecting to a VCR which accepts Y/C signals and uses an S-VIDEO cable.
  CVBS : When connecting to a VCR which does not accept Y/C signals and uses an audio/video cable.


MBR SET
VCR CTL

RM-V704U or RM-V700U (provided)

VCR CODE LIST

VCR BRAND NAME	BUTTONS (A) (B)
AKAI	❻ ❷ ❻ ❹ ❼ ❼
BLAUPUNKT	❶ ❸
FERGUSON	❾ ❼ ❾ ❽ ❸ ❷
GRUNDIG	❶ ❹ ❸ ❹
HITACHI	❻ ❻ ❻ ❸
JVC A B C	❾ ❶ ❾ ❻ ❾ ❸
MITSUBISHI	❻ ❼ ❻ ❽
NEC	❸ ❼ ❸ ❽
PANASONIC	❶ ❸ ❶ ❼ ❶ ❶ ❾ ❹ ❶ ❽

VCR BRAND NAME	BUTTONS (A) (B)
PHILIPS	❶ ❾ ❾ ❺ ❶ ❶ ❾ ❹ ❾ ❶ ❾ ❻ ❶ ❷ ❸ ❸
SANYO	❸ ❻ ❸ ❺
SELECO, REX	❾ ❶ ❾ ❻
SHARP	❶ ❺ ❶ ⓿
SONY	❻ ❺ ❻ ⓿ ❸ ❾ ❸ ❶
THOMSON, TELEFUNKEN, SABA, NORDMENDE	❾ ❶ ❾ ❻ ❾ ❼ ❸ ❷
TOSHIBA	❻ ❾ ❻ ❶

Random Assemble Editing [R.A. Edit]

Create edited videos easily using your camcorder as the source player. You can select up to 8 "cuts" for automatic editing, in any order you like. R.A. Edit is more easily performed when the MBR (Multi-Brand Remote RM-V704U or RM-V700U) is set to operate with your brand of VCR (see VCR CODE LIST), but can also be performed by operating the VCR manually.

SET REMOTE/VCR CODE

1

SET REMOTE TO OPERATE VCR

Turn off the power to the VCR and point the remote toward the VCR's infrared sensor. Then, referring to the VCR CODE LIST on the left, press and hold **MBR SET**, and press button (A) and then (B).

- The code is automatically set once you release the **MBR SET** button, and the VCR's power comes on.

2

OPERATE THE VCR

Make sure the VCR's power is on. Then, while holding **VCR CTL**, press the button on the remote for the desired function. The functions the remote can control are PLAY, STOP, PAUSE, FF, REW and VCR REC STBY (you don't need to press **VCR CTL** for this one).

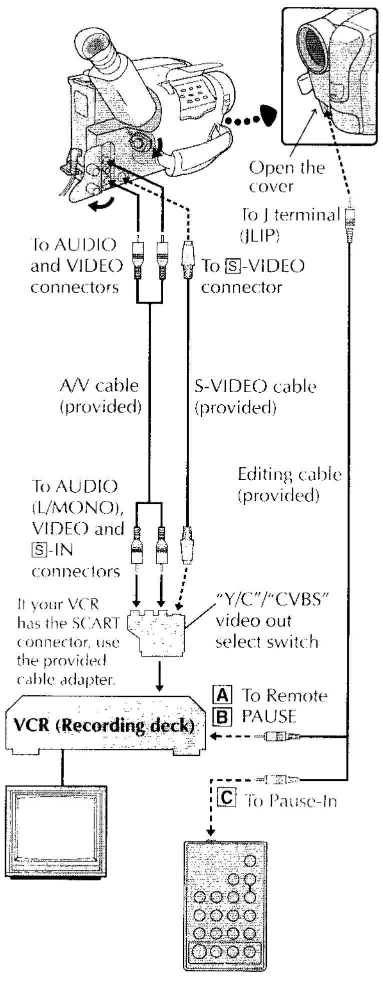
You're now ready to try Random Assemble Editing.

IMPORTANT

Although the MBR is compatible with JVC VCRs and those of many other makers, it may not work with yours or may offer limited functions.

NOTES:

- *If the VCR's power doesn't come on in step **1**, try another code from the VCR CODE LIST.*
- *Some brands of VCR don't come on automatically. In this case, turn the power on manually and try step **2**.*
- *If the RM-V704U/V700U is not able to control the VCR, use the controls on the VCR.*


Open the cover
To J terminal (JLIP)
To AUDIO and VIDEO connectors
To Ⓢ-VIDEO connector
A/V cable (provided)
S-VIDEO cable (provided)
To AUDIO (L/MONO), VIDEO and Ⓢ-IN connectors
Editing cable (provided)
If your VCR has the SCART connector, use the provided cable adapter.
"Y/C"/"CVBS" video out select switch
Ⓐ To Remote
Ⓑ PAUSE
VCR (Recording deck)
Ⓒ To Pause-In

RM-V704U or RM-V700U (provided)

MAKE CONNECTIONS

1

CONNECT TO . . .

Ⓐ **JVC VCR EQUIPPED WITH REMOTE PAUSE TERMINAL**
Connect the editing cable to the Remote PAUSE terminal.

Ⓑ **JVC VCR NOT EQUIPPED WITH REMOTE PAUSE TERMINAL.**
Connect the editing cable to the R.A. EDIT connector.

Ⓒ **NON-JVC VCR WITH NEITHER**
Connect the editing cable to the RM-V704U/V700U's Pause-In jack.

2

PREPARE CAMCORDER

Insert a recorded tape and set the Power switch to "PLAY".

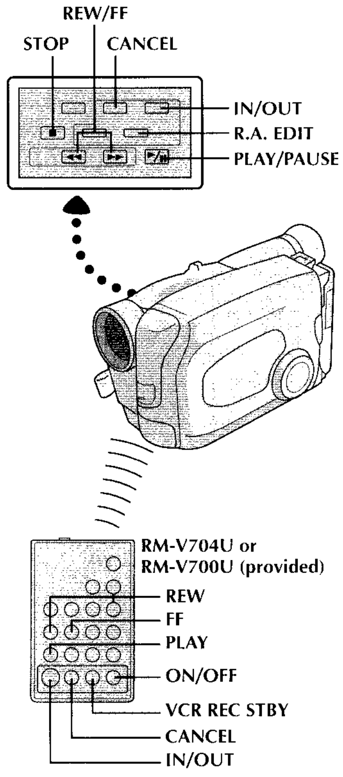
3

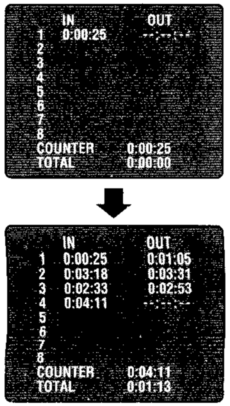
PREPARE VCR

Turn the power on, insert a recordable tape and engage the AUX mode (refer to VCR's instructions).

NOTES:

- *If your VCR has an S-VIDEO input connector or a SCART connector compatible with Y/C signals, connect the camcorder and the VCR using the provided S-VIDEO cable. This can improve the dubbed picture quality.*
- *If you use the provided cable adapter, set the "Y/C"/"CVBS" video out select switch as required.*
  Y/C : When connecting to a VCR which accepts Y/C signals and uses an S-VIDEO cable.
  CVBS : When connecting to a VCR which does not accept Y/C signals and uses an audio/video cable.


REW/FF
STOP
CANCEL
IN/OUT
R.A. EDIT
PLAY/PAUSE
RM-V704U or
RM-V700U (provided)
REW
FF
PLAY
ON/OFF
VCR REC STBY
CANCEL
IN/OUT


IN OUT
1 0:00:25 --:--:--
2
3
4
5
6
7
8
COUNTER 0:00:25
TOTAL 0:00:00
IN OUT
1 0:00:25 0:01:05
2 0:03:18 0:03:31
3 0:02:33 0:02:53
4 0:04:11 --:--:--
5
6
7
8
COUNTER 0:04:11
TOTAL 0:01:13

SELECT SCENES

1 ACCESS R.A. EDIT COUNTER DISPLAY

Press **PLAY/PAUSE**, then press **R.A. EDIT** and the counter display appears in the viewfinder and the screen of the connected TV.

2 REGISTER BEGINNING OF SCENE

Press **REW** or **FF** to locate the beginning of the scene you want, then press **IN/OUT** to register that point. The data appears under IN on the display.

3 REGISTER END OF SCENE

Press **REW** or **FF** to locate the end of the scene and press **IN/OUT** to register it. The data appears under OUT on the display. The total time of the registered scene(s) is displayed at the bottom of the screen.

4 REGISTER ADDITIONAL SCENES

Repeat steps **2** and **3** for each additional scene (as many as 8).

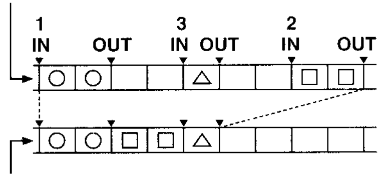
5 MAKE CORRECTIONS

Press **CANCEL** during steps **2** and **3** to erase the most recently registered point.

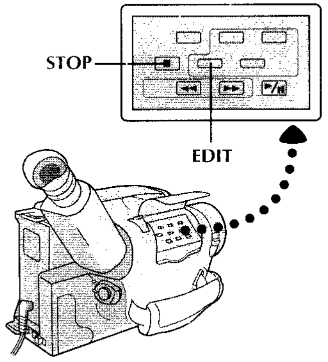
NOTES:

- *The RM-V704U/V700U can be used to operate other camcorder functions as well. Point the RM-V704U/V700U at the camcorder's remote sensor and press any of the following buttons (function appears in parentheses):*
  - *— ON/OFF (camcorder R.A. EDIT)*
  - *— IN/OUT (camcorder IN/OUT)*
  - *— CANCEL (camcorder CANCEL)*
- *There must be at least one second between an in-point and its corresponding out-point.*
- *To ensure correct operation, leave at least 15 seconds open between scenes.*
- *Blank portions of tape cannot be registered as in-points or out-points.*
- *If it takes more than 5 minutes to search for an in-point, the VCR's Record-Pause mode is cancelled and editing doesn't take place.*
- *Pressing **R.A. EDIT** clears all in- and out-points from memory.*
- *Leave a small margin for error around each in-point to ensure the scene is recorded in its entirety.*

ORIGINAL TAPE (camcorder)


1
IN
OUT
3
IN
OUT
2
IN
OUT

EDITED TAPE (VCR)



AUTOMATIC EDITING TO VCR

1 ENGAGE VCR'S RECORD–PAUSE MODE

Point the remote control toward the VCR's infrared sensor and press **VCR REC STBY**, or manually engage the VCR's Record-Pause mode.

2 BEGIN AUTOMATIC EDITING

Press **EDIT** on the camcorder, and the previously selected scenes are copied to the VCR in the specified order.

3 END AUTOMATIC EDITING

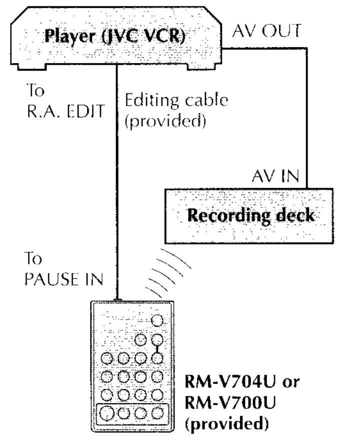
When all selected scenes have been copied, the camcorder and VCR enter the still or pause mode. Press **STOP** on both units.

- When finished editing, be sure to disconnect the editing cable and the audio/video cable.

NOTES:

- *If you performed step 1C on page 35 ("MAKE CONNECTIONS"), keep the remote control pointed at the VCR during editing.*
- *The on-screen display only appears while the camcorder searches for each scene.*
- *There may be noise at in- or out-points on the edited tape with certain VCRs.*

SUPPLEMENTAL INFORMATION ON THE REMOTE CONTROL


Player (JVC VCR)
AV OUT
To
R.A. EDIT
Editing cable
(provided)
AV IN
Recording deck
To
PAUSE IN
RM-V704U or
RM-V700U
(provided)

Using the RM-V704U/V700U, it is also possible to perform deck-to-deck Random Assemble Editing. The playback deck must be an R.A. Edit-capable JVC VCR. The recording deck can be...

- ■ a VCR other than JVC, or
- ■ a JVC VCR which has **neither** a Remote PAUSE nor an R.A. EDIT connector

How to use:

— Connect the playback deck and RM-V704U/V700U as shown on the left.

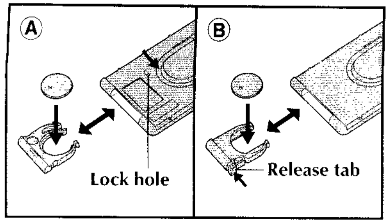
— Set the RM-V704U/V700U to correspond to the brand of the recording deck. (☞ pg. 34)

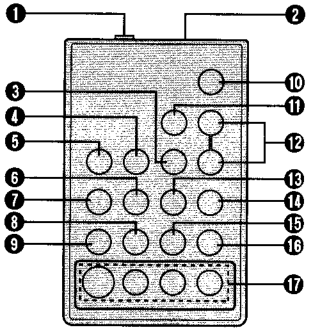
— For Random Assemble Editing procedure, please refer to the instruction manual of the JVC VCR you are using as the playback deck.

Notes:

- ■ RM-V704U/V700U cannot be used to control the playback deck.
- ■ RM-V704U/V700U is capable of controling basic operations of the recording deck. While pressing VCR CTL, press PLAY, STOP, PAUSE, FF or REW for these functions. (Not possible with some brands and models). Other buttons cannot be used.
- ■ To put the recording deck in the Record-Pause mode, use the controls on the recording deck itself.

USING REMOTE CONTROL UNIT





RM-V704U or RM-V700U (provided)

The Full-Function Remote Control Unit can operate this camcorder from a distance as well as the basic operations (PLAY, STOP, PAUSE, FF, and REW) of your VCR. This remote control unit makes additional recording functions possible.

Installing The Battery

1 PULL OUT BATTERY HOLDER

Pull out the battery holder according to the type of remote control unit you have.

Type Ⓐ : Pull out the battrery holder while sliding the lock hole.

Type Ⓑ : Pinch the release tab and pull out the battery holder.

2 INSERT BATTERY

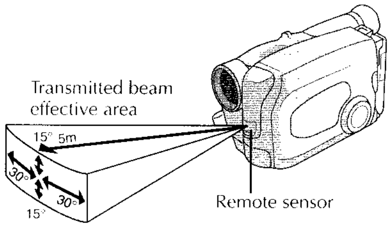
Making sure the plus (+) side is up, insert the lithium battery (CR2025)* into the battery holder.

3 REPLACE BATTERY HOLDER

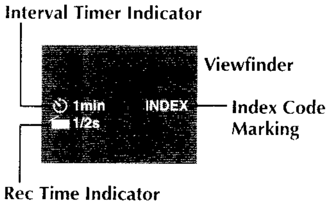
Insert the battery holder into the remote control unit, and push the holder until it clicks into place.

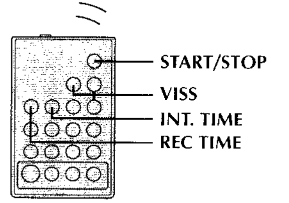
* Read the caution concerning lithium batteries (☞ pg. 2).

BUTTONS	FUNCTIONS	
	With the camcorder's power switch set to "CAMERA".	With the camcorder's power switch set to "PLAY".
❶ PAUSE IN Connector	—	☞ pg. 35
❷ Infrared beam transmitting window	Transmits the beam signal.	
❸ MBR SET Button	—	☞ pg. 34
❹ INT. TIME Button	Self-Timer/Time-Lapse (☞ pg. 39)	—
❺ REC TIME Button	Animation/Time-Lapse (☞ pg. 39)	—
❻ FF Button	Retake (forward) (☞ pg. 12)	FF/FF Shuttle Search (☞ pg. 30)
❼ REW Button	Retake (rewind)/Quick Review (☞ pg. 12)	Rew/Rew Shuttle Search (☞ pg. 30)
❽ PAUSE Button	—	Pause (☞ pg. 31)
❾ PLAY Button	—	Playback start (☞ pg. 30)
❿ START/STOP Button	Functions same as the Recording Start/Stop button on the camcorder.	
⓫ VISS Button	Index Code marking (☞ pg. 39)	—
⓬ ZOOM (T/W) Buttons	Zoom in and out (☞ pg. 12)	—
⓭ VCR CTL Button	—	☞ pg. 34
⓮ A.DUB Button	—	Audio dubbing (☞ pg. 41)
⓯ STOP Button	—	Stop (☞ pg. 30)
⓰ INSERT Button	—	Insert Editing (☞ pg. 40)
⓱ R.A.EDIT Buttons	—	☞ pg. 36



When using the remote control, be sure to point it at the remote sensor. The above illustration shows the approximate transmitted beam effective area for indoor use.
The transmitted beam may not be effective or may cause incorrect operation outdoors or when the remote sensor is directly exposed to sunlight or powerful lighting.

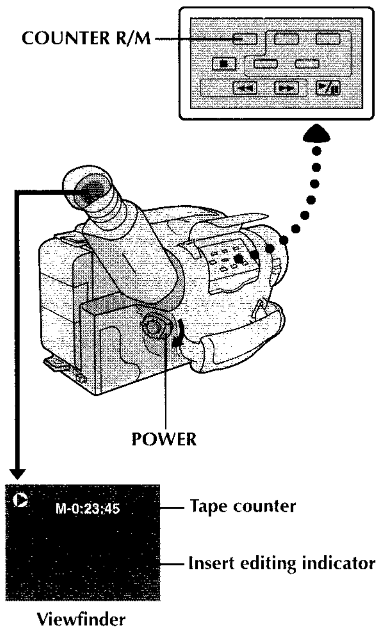


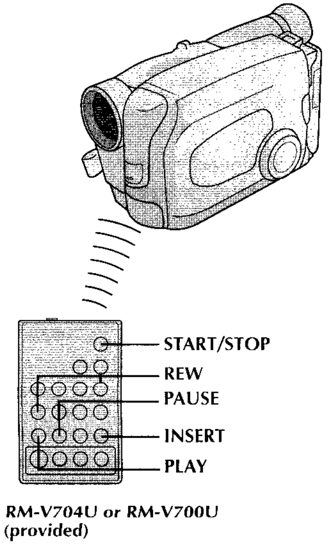


RM-V704U or RM-V700U (provided)

FEATURE:	**Self-Timer, Animation and Time-Lapse**
PURPOSE:	The remote control lets you set/release Interval Timer and Rec Time functions as well as the Menu screen.
OPERATION:	***Self-Timer*** **1) Set** Instead of performing steps **1** through **3** on pg. 26 ("Self-Timer"), press **INT. TIME** on the remote control. Each time **INT. TIME** is pressed, the Interval Timer indicator appears, changing in the following order: 15s, 30s, 1min, 5min and No indication (off). **2) Release** Instead of setting "Interval Timer" to "OFF" in the Menu, press **INT. TIME** on the remote control until the Interval Timer indicator disappears. ***Animation*** **1) Set** Instead of performing steps **1** and **2** on pg. 27 ("Animation"), press **REC TIME** on the remote control. Each time **REC TIME** is pressed, the Rec Time indicator appears, changing in the following order: 1/4s, 1/2s, 1s, 5s and No indication (off). **2) Release** Instead of using the Menu in step **5** on pg. 27, press **REC TIME** on the remote control until the Rec Time indicator disappears. ***Time-Lapse*** **1) Set** Instead of performing steps **1** through **3** on pg. 27 ("Time-Lapse"), press **INT. TIME** and **REC TIME** on the remote control. Each time **INT. TIME** is pressed, the Interval Timer indicator appears, changing in the following order: 15s, 30s, 1min, 5min and No indication (off). Each time **REC TIME** is pressed, the Rec Time indicator appears, changing in the following order: 1/4s, 1/2s, 1s, 5s and No indication (off). **2) Release** Instead of using the Menu in step **5** on pg. 27, press **INT. TIME** and **REC TIME** on the remote control until the indicators disappear.
NOTE:	*Also refer to pgs. 26 and 27.*

FEATURE:	**Index Code Marking**
PURPOSE:	To give you automatic access to any selected point on a recording.
OPERATION:	1) Press **VISS** once to place the index code. "INDEX" blinks in the viewfinder during marking.
NOTE:	*If **VISS** is pressed during Record–Standby mode, the mark is placed where **Recording Start/Stop** is pressed.*





Insert Editing

You can record a new scene into a previously recorded tape, replacing a section of the original recording with minimal picture distortion at the in- and out-points. The original audio remains unchanged.

NOTE:

Use the RM-V704U or RM-V700U remote control unit to perform this procedure.

1 SELECT MODE

Set the Power switch to "PLAY".

2 FIND EDIT-OUT POINT

Play back the tape, locate the point and press **PAUSE** on the camcorder or the remote control.

3 RESET COUNTER

Press and hold **COUNTER R/M** for more than 2 seconds to reset the tape counter, then press for less than 1 second and make sure "M" appears in the viewfinder.

4 FIND EDIT-IN POINT

Press **REW** to go a little beyond the beginning of the scene you want to replace, press **PLAY** to view the recorded tape, and press **PAUSE** at exactly at the point where the new scene should start.

5 ENGAGE INSERT EDITING MODE

Press and hold **INSERT**, and without releasing **INSERT**, press and release **PAUSE**. The Insert mode is engaged. When the scene the camcorder is aimed at appears on the screen, go to the next step.

6 BEGIN INSERT EDITING

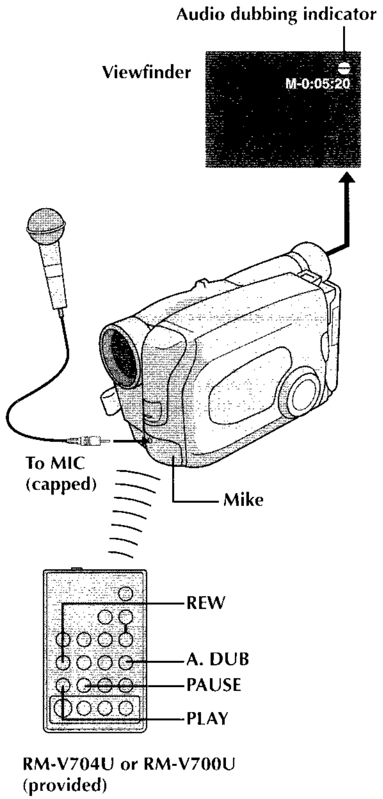
Press **Recording Start/Stop**. When the counter reaches "0:00:00", editing stops automatically and the camcorder enters the Insert-Pause mode.

7 END INSERT EDITING

Press **STOP**.

NOTES:

- *After step **5**, Retake (☞ pg. 12) can be performed.*
- *The tape may stop slightly before or after the designated end point, and noise bars may appear. Neither indicates a defect in the unit.*
- *Only video signals are recorded in the Insert Editing mode.*



Audio Dubbing

You can record a new soundtrack on a prerecorded tape (normal audio only).

** Perform steps **1**, **2** and **3** of the Insert Editing procedure (☞ pg. 40) before continuing.

- The sound comes from the built-in mike (or an external mike if connected).

1 FIND EDIT-IN POINT

Press **REW** to go a little beyond the beginning of the scene onto which you want to dub new audio, press **PLAY** to view the recorded tape, then press **PAUSE** at exactly the point where dubbing should start.

2 ENGAGE AUDIO DUB STANDBY MODE

Press and hold **A. DUB**, and without releasing **A. DUB**, press and release **PAUSE**.

3 BEGIN AUDIO DUBBING

Press **PLAY**. When the counter reaches "0:00:00", Audio Dubbing stops automatically and the camcorder enters the Audio Dub-Standby mode.

4 END AUDIO DUBBING

Press **STOP**.

NOTES:

- *Do not press **FF** or **REW** during Audio Dub-Standby, or the edit points will not be accurate.*
- *If the mike is too close to the TV, or if the TV's volume is too high, whistling or howling may occur.*

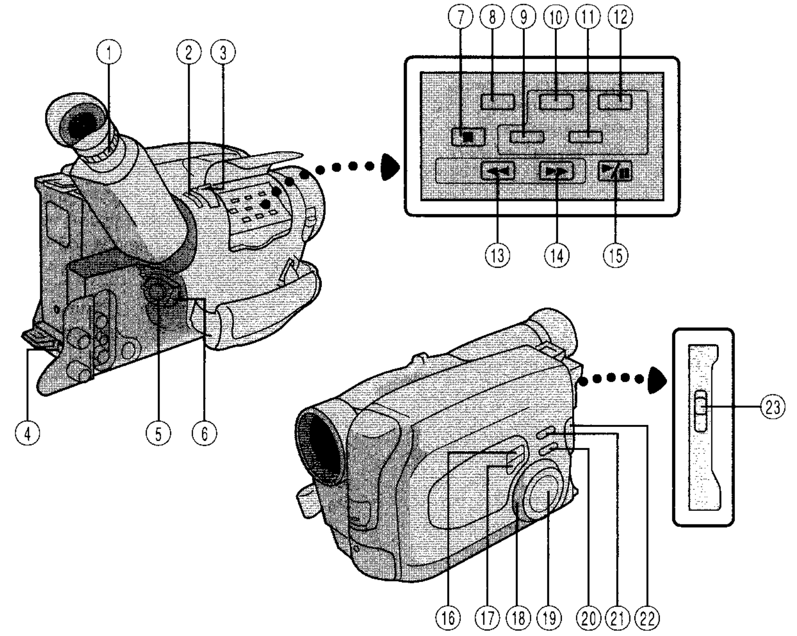
NOTES (for Insert Editing and Audio Dubbing):

- *Insert Editing and audio Dubbing may not work correctly if the tape contains blank segments, or if the recording speed was changed during the original recording.*
- *To edit/dub onto a tape with the recording safety tab removed, cover the hole with adhesive tape.*
- *Do not press **STOP** during Insert Editing or Audio Dubbing, or the edit points will not be accurate.*
- *During Insert Editing and Audio Dubbing, when Insert–Pause or Audio Dub–Standby is engaged, the counter may go slightly past "0:00:00". Recording, however, stops at exactly 0:00:00.*

SYMPTOM	POSSIBLE CAUSE(S)
POWER	
No power is supplied.	● The battery pack has not been attached correctly (☞ pg. 4). ● The battery pack is not charged (☞ pg. 4). ● The power supply has not been correctly connected (☞ pg. 5).
The power suddenly goes off and doesn't come back on by itself.	● The battery pack has completely discharged. ● Remove the cassette and disconnect the power source, then after a few minutes, try turning the power back on. If it still doesn't come on, consult your nearest JVC dealer.
RECORDING	
Recording cannot be performed.	● The recording tape's Erase Protection tab is missing. Cover the hole with adhesive tape. (Some tapes have sliding tabs. In this case, check the position of the tab.)
Recording does not start.	● The camcorder Power switch has not been set to "CAMERA" (☞ pg. 11).
PLAYBACK	
The tape is running, but there's no playback picture.	● The TV has not been set to its VIDEO mode. ● If A/V connection is used, the TV's VIDEO/TV switch has not been set to VIDEO. ● The RF unit has not been set to the correct channel.
Noise bars appear in the playback picture.	● Manual Tracking has not been performed (☞ pg. 31).
Noise appears throughout the entire playback picture.	● This occurs when playing back a blank portion of tape. ● If this occurs when playing a recorded portion, there is a possibility that the video heads are dirty or the camcorder is broken. Consult your nearest JVC dealer.
Playback picture is blurred or interrupted.	● The video heads are dirty or worn out. Consult your nearest JVC dealer for head cleaning or replacement.
The counter indication is blurred during Still playback.	● This is normal.
Tape was played back on VCR using cassette adapter but picture could not be viewed.	● Tapes recorded in S-VHS cannot be played back on regular VHS VCRs (☞ pg. 8). Connect camcorder directly either to VCR or to TV, then playback can be performed on camcorder (☞ pg. 28).
TAPE TRANSPORT	
The tape stops during fast-forward or rewind.	● The Counter Memory Function has been activated (☞ pg. 31).
Rewinding or fast-forwarding cannot be performed.	● The tape is already fully wound on one reel or the other.

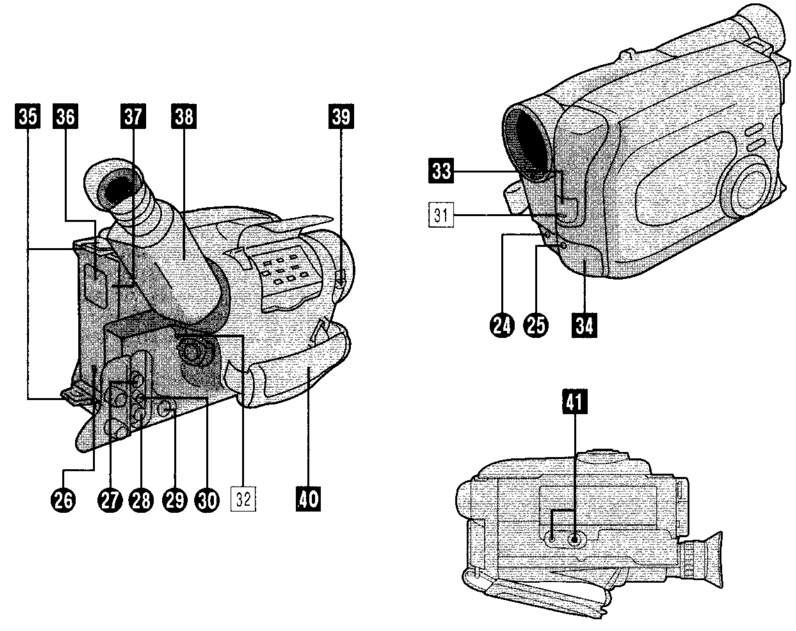
SYMPTOM	POSSIBLE CAUSE(S)
OTHER	
The tape won't eject.	● The battery pack is running low.
Some functions are not available.	● The PROGRAM AE select dial is set to "AUTO LOCK".
Vertical white lines appear when shooting a very bright object.	● This sometimes occurs when the contrast between the background and the object is great. It is not a defect of the camcorder.
Bright, crystal-shaped spots appear in the viewfinder.	● Sunlight is directly entering the lens.
An error number (i.e. E03) appears in the viewfinder.	● Turn the camcorder's power off, then disconnect the power source. After a few minutes, try turning the power on again. If the error number still appears in the viewfinder, consult your nearest JVC dealer.
The image is out of focus.	● The diopter needs to be adjusted (☞ pg. 6). ● The scene being shot is adversely affecting the operation of Auto Focus (☞ pg. 16).
A character generator title and the date and time displays disappear from the viewfinder.	● If you remove the power source from the camcorder while the power is on, all settings and selections are erased. Make sure to turn the camcorder's power off before disconnecting the power source.
The wrong date and time are displayed/recorded.	● If you have not performed Date/Time Setting (☞ pg. 7), the date and time are not displayed/recorded correctly. Be sure that Date/Time setting is carried out.
Even though the Lens Cover is open, the Lens Cover Warning indicator blinks.	● The Lens Cover Warning indicator may blink when the camcorder is used in dark areas, regardless of the position of the Lens Cover.
When the camcorder is swung or shaken, a noise can be heard.	● This camcorder is equipped with Auto Pause System which has a sensor for detection. Because of the sensor, when the camcorder is swung or shaken, noise can be heard from the sensor. This is not a malfunction.

The camcorder is a microcomputer-controlled device. External noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such cases, first disconnect its power supply unit (battery pack, AC Power Adapter/Battery Charger, etc.) and clock battery; and then re-connect it and proceed as usual from the beginning.



Controls

① Diopter Adjustment ☞ pg. 6
② QUICK REC Button ☞ pg. 13
③ Power Zoom Lever ☞ pg. 12
④ BATT. [Battery] RELEASE Switch ☞ pg. 4
⑤ Recording Start/Stop Button ☞ pg. 11
⑥ POWER Switch ☞ pg. 11, 30
⑦ STOP Button ☞ pg. 30
⑧ Tape Length [30•45•60] Select Button ☞ pg. 8
COUNTER R [Reset]/M [Memory] Button ☞ pg. 31
⑨ EDIT Button ☞ pg. 37
⑩ R.A.EDIT CANCEL Button ☞ pg. 36
⑪ • S-VHS/VHS Recording Format Select Button ☞ pg. 8
• R.A.EDIT Button ☞ pg. 36
⑫ • R.A.EDIT IN/OUT Button ☞ pg. 36
• AUTO PAUSE Button ☞ pg. 13
⑬ REW Button ☞ pg. 30
RETAKE R [Quick Review] Button ☞ pg. 12
⑭ FF Button ☞ pg. 30
RETAKE F Button ☞ pg. 12
⑮ PLAY/PAUSE Button ☞ pg. 30
⑯ SELECT Button ☞ pg. 19
⑰ SET Button ☞ pg. 19
⑱ PROGRAM AE Select Dial ☞ pg. 14
⑲ Multi-Function Control
• Exposure +/– ☞ pg. 18
• Focus FAR/NEAR ☞ pg. 16
• Menu Setting Change ☞ pg. 24
• Tracking +/– ☞ pg. 31
⑳ MENU Button ☞ pg. 24
㉑ P. [Picture] STABILIZER Button ☞ pg. 18
㉒ PUSH Button ☞ pg. 9
㉓ EJECT Switch ☞ pg. 9



Connectors

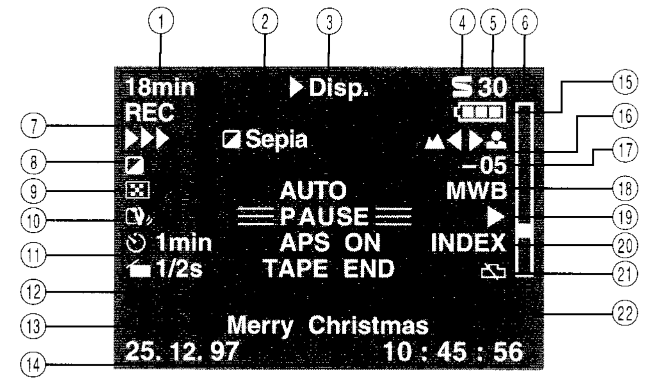
㉔ J terminal (JLIP (Joint Level Interface Protocol) Connector.)
(Located beneath the jack cover)
• Connect the Editing Cable when performing Random Assemble Editing (☞ pg. 35).
• It is used to connect the camcorder to a device such as a personal computer.
For further detail consult your nearest JVC dealer. Information (in English) is also available at our home page: http://www.jvc-victor.co.jp/
㉕ External MIC Jack (capped) ☞ pg. 41
㉖ DC IN Jack ☞ pg. 5
The jacks ㉗ to ㉚ are located beneath the jack cover.
㉗ AUDIO OUT Jack ☞ pg. 28
㉘ VIDEO OUT Jack ☞ pg. 28
㉙ S-VIDEO OUT Jack ☞ pg. 28
㉚ RF DC OUT Jack ☞ pg. 29

Indicators

[31] Tally Lamp ☞ pg. 11
[32] Power On Indicator ☞ pg. 11

Other Parts

[33] • Camera sensor
Be careful not to cover this area; built-in here is the sensor necessary for shooting.
• Remote sensor ☞ pg. 39
[34] Microphone ☞ pg. 41
[35] Shoulder Strap Eyelets ☞ pg. 10
[36] Clock Battery Compartment ☞ pg. 6
[37] Battery Pack Mount ☞ pg. 4
[38] Electronic Viewfinder ☞ pg. 6
[39] LENS COVER Switch ☞ pg. 11
[40] Grip Strap ☞ pg. 10
[41] Tripod Mounting Socket ☞ pg. 10



Viewfinder Indications

① Cassette Warning/Remaining Tape Time .... ☞ pg. 11
When no cassette is inserted: the Cassette (▭) Warning blinks.
When Erase Protection tab is not in the position that allows recording: the Cassette (▭) Warning lights. Otherwise, the Remaining Tape Time is displayed.

②, ⑧ PROGRAM AE Indicator .... ☞ pg. 14
Displayed at ② for approx. 1 second when the PROGRAM AE select dial is switched from one position to another. Then only the indicator remains at ⑧.

②, ⑨ Fade/Wipe Standby Indicator .... ☞ pg. 19
Displayed at ② for approx. 2 seconds when the Fade/Wipe is switched from one function to another by pressing the SET button. Then only the indicator remains at ⑨.

③ Program Manager Function Indication .... ☞ pg. 19
Appears when the PROGRAM AE select dial is set to any position other than AUTO LOCK.

④ Recording Format Indicator .... ☞ pg. 8

⑤ Tape Length Display .... ☞ pg. 8

⑥ Zoom Indicator Bar .... ☞ pg. 12

⑦ Recording Indicator .... ☞ pg. 11

⑩ Picture Stabilizer Indicator .... ☞ pg. 18

⑪ Interval Time/Recording Time Indicator .... ☞ pg. 26

⑫ • Record–Standby Mode Indicator ...... ☞ pg. 11
• Lens Cover Warning:
LENS COVER .... ☞ pg. 11
• Auto Pause System Indicator .... ☞ pg. 13

⑬ Instant Titles Display .... ☞ pg. 20

⑭ Date/Time Character Display .... ☞ pg. 22

⑮ Battery Pack Remaining Power Indicator
Changes as follows according to the battery pack's remaining power level: "▮▮▮→▮▮→▮→▯".
When the power is almost gone, the indicator blinks, then the unit shuts off. Replace the battery pack with a fully charged one.
(**Note:** The symbol containing 3 darkened squares — ▮▮▮ — does not necessarily mean that the battery pack is fully charged.)

⑯ Focus Indicator .... ☞ pg. 16

⑰ Exposure Level Indicator .... ☞ pg. 18

⑱ White Balance Mode Indicator .... ☞ pg. 23

⑲ Menu Setting Change Indicator .... ☞ pg. 24

⑳ Index Code Marking .... ☞ pg. 39

㉑ Clock Warning
Once the power is turned on and the indicator blinks for about 10 seconds, perform the date and time settings (☞ pg. 7). After setting is complete, turn the power off and disconnect the power source. If you re-connect it and turn the power on and the indicator is blinking, that means that the clock (lithium) battery is either not installed or has discharged. Install, or replace the old battery with, a new one (☞ pg. 6).

㉒ • Tape End Display: TAPE END .... ☞ pg. 11
Appears when the end of the tape is reached during playback, recording or fast-forward.
• Condensation Warning: ▮
When this indication appears, all functions are disabled. Turn the unit off (without removing the power source) for a few hours, and when you turn it on again the indicator should disappear.

General Battery Precautions

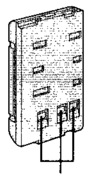
- When the C-P6U or C-P7U (cassette adapter) is not functioning even when correctly operated, the batteries are exhausted. Replace them with fresh ones.
- Use only the following batteries:
C-P6U or C-P7U .... R6 (AA) size

Please make note of the following rules for battery use. When misused, batteries can leak or explode.

1. Refer to the instructions when replacing the battery.
2. **Do not** expose batteries to excessive heat as they can leak or explode.
3. **Do not** dispose of batteries in a fire.
4. Remove the battery from the unit if it is to be stored for an extended period to avoid battery leakage which can cause malfunctions.

Battery Packs

The supplied battery pack is a nickel-cadmium battery. Before using the supplied battery pack or an optional battery pack, be sure to read the following cautions:


Terminals

1. **To avoid hazard . . .**
.... **do not** burn.
.... **do not** short-circuit the terminals.
.... **do not** modify or disassemble.
.... use only specified chargers.

2. **To prevent damage and prolong service life . . .**
.... **do not** subject to unnecessary shock.
.... avoid repeated charging without fully discharging.
.... charge in an environment where temperatures are within the tolerances shown in the chart below. This is a chemical reaction type battery—cooler temperatures impede chemical reaction, while warmer temperatures can prevent complete charging.
.... store in a cool, dry place. Extended exposure to high temperatures will increase natural discharge and shorten service life.
.... avoid prolonged uncharged storage.
.... remove from charger or powered unit when not in use, as some machines use current even when switched off.

3. **To prevent damage to the camcorder . . .**
.... replace the battery pack when it begins to deliver less recording time per charge.

NOTE:

It is normal for the battery pack to be warm after charging, or after use.

Temperature Ranges

Charging .... 10°C to 35°C
Operation .... 0°C to 40°C
Storage .... –10°C to 30°C

NOTES:

- *Recharging time is based on room temperature of 20°C.*
- *The lower the temperature, the longer recharging takes.*

Cassettes

To properly use and store your cassettes, be sure to read the following cautions:

1. **During use . . .**
.... make sure the cassette bears the S-VHS-C or VHS-C mark.
.... be aware that recording onto prerecorded tapes automatically erases the previously recorded video and audio signals.
.... make sure the cassette is positioned properly when inserting.
.... do not load and unload the cassette repeatedly without allowing the tape to run at all. This slackens the tape and can result in damage.
.... do not open the front tape cover. This exposes the tape to fingerprints and dust.

2. **Store cassettes . . .**
.... away from heaters or other heat sources.
.... out of direct sunlight.
.... where they won't be subject to unnecessary shock or vibration.
.... where they won't be exposed to strong magnetic fields (such as those generated by motors, transformers or magnets).
.... vertically, in their original cases.

Main Unit

1. For safety, DO NOT . . .

.... open the camcorder's chassis.
.... disassemble or modify the unit.
.... short-circuit the terminals of the battery pack. Keep it away from metallic objects when not in use.
.... allow inflammables, water or metallic objects to enter the unit.
.... remove the battery pack or disconnect the power supply while the power is on.
.... leave the battery pack attached when the camcorder is not in use.

2. Avoid using the unit . . .

.... in places subject to excessive humidity or dust.
.... in places subject to soot or steam such as near a cooking stove.
.... in places subject to excessive shock or vibration.
.... near a television set.
.... near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).
.... in places subject to extremely high (over 40°C) or extremely low (under 0°C) temperatures.

3. DO NOT leave the unit . . .

.... in places of over 50°C.
.... in places where humidity is extremely low (below 35%) or extremely high (above 80%).
.... in direct sunlight.
.... in a closed car in summer.
.... near a heater.

4. To protect the unit, DO NOT . . .

.... allow it to become wet.
.... drop the unit or strike it against hard objects.
.... subject it to shock or excessive vibration during transportation.
.... keep the lens directed at extremely bright objects for long periods.
.... direct the eyepiece of the viewfinder at the sun.
.... carry it by holding the viewfinder.
.... swing it excessively when using the shoulder strap.

5. This camcorder features a built-in head cleaner which automatically cleans the heads and head drum when a cassette is loaded or unloaded. If, however, the heads become dirty and cause blurriness or interruption in the playback picture, *consult your nearest JVC dealer.*

About moisture condensation . . .

- You have observed that pouring a cold liquid into a glass will cause drops of water to form on the glass' outer surface. This same phenomenon occurs on the head drum of a camcorder when it is moved from a cool place to a warm place, after heating a cold room, under extremely humid conditions or in a place directly subjected to the cool air from an air conditioner.
- Moisture on the head drum can cause severe damage to the video tape, and can lead to internal damage to the camcorder itself.

Serious malfunctioning

If malfunctioning occurs, stop using the unit immediately and consult your local JVC dealer.

For Your Maintenance

1. After Use

① Set the power switch to POWER OFF to turn off the camcorder.
② Slide EJECT to open the cassette holder, then remove the cassette.
③ Close and lock the cassette holder by pressing PUSH.
④ Press BATT. RELEASE to remove the battery pack.
⑤ Slide the LENS COVER open/close switch to close the lens cover.

2. Cleaning The Camcorder

① **CLEAN EXTERIOR**
Wipe gently with a soft cloth.
② **CLEAN LENS**
Blow it with a blower brush, then wipe gently with lens cleaning paper.
③ **REMOVE EYEPIECE**
Turn the eyepiece counterclockwise and pull it out.
④ **CLEAN VIEWFINDER**
Remove dust using a blower brush.
⑤ **RE-ATTACH EYEPIECE**
Align the marks, re-attach the eyepiece and turn it clockwise.

NOTES:

- *Avoid using strong cleaning agents such as benzine or alcohol.*
- *Cleaning should be done only after the battery pack has been removed or other power units have been disconnected.*
- *Mold may form if the lens is left dirty.*

SECTION 1
DISASSEMBLY

1.1 SERVICE CAUTIONS

1.1.1 Precautions

1. Before disassembling/re-assembling the set as well as soldering parts, make sure to disconnect the power cable.
2. When disconnecting/connecting connectors, pay enough attention to wiring not to damage it.
3. In general, chip parts such as resistor, shorting jumpers (0-ohm resistor), ceramic capacitors, diodes, etc. can not be reused after they were once removed.
4. When installing parts, be careful not to do with other parts as well as not to damage others.
5. When removing ICs, be careful not to damage circuit patterns.

1.1.2 How to read the disassembly and assembly

(For Cabinet Parts)

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CASSETTE COVER ASSEMBLY	C1	(S1), 3(L1), (L2) PUSH BUTTON *CONNECTOR Ⓐ	<NOTE 1> <NOTE 2>
②	TOP COVER	C2	(S2), 4(L3)	–
③	FRONT COVER ASSEMBLY	C3	4(S2), 3(L4) JACK COVER *CONNECTOR Ⓑ	<NOTE 1> <NOTE 3>
④	MICROPHONE	C3	(S2)	–

↑ ① ↑ ② ↑ ③ ↑ ④ ↑ ⑤

① : Order of steps in Procedure
When reassembling, preform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.
② : Part to be removed or installed.
③ : Fig. No. showing Procedure or Part Location.
C = Cabinet
CA = Camera
D = Deck
④ : Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
P = Spring
W = Washer
S = Screw
* = Unhook, unlock, release, unplug or unsolder.
6(S2) = 6 Screws (S2)
⑤ : Adjustment information for installation.

1.1.3 Connection of the wires

1. Pull the connector structure upward to release the clamp when removing or inserting the flat wire cable.

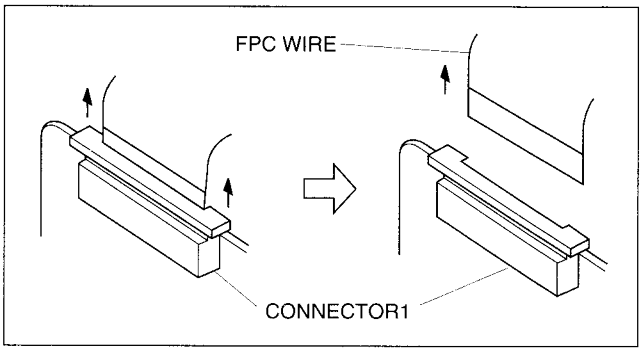


Fig. 1-1-1

2. Pull to unlock the connector cover when removing or inserting the flat wire cable.

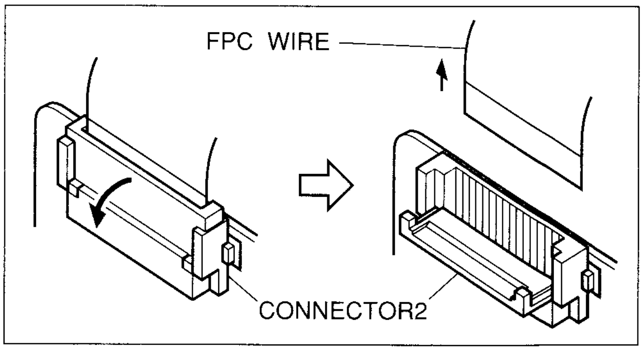


Fig. 1-1-2

1.1.4 Main screws to deal with disassembly/assembly

Table 1-1-1 lists screws by their symbols correspond to those shown in figures of this section "Disassembly".

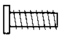
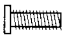
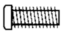
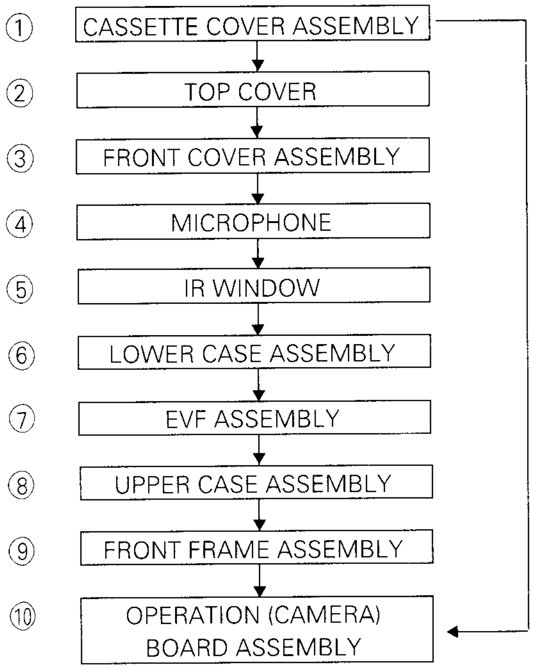
SYMBOL OF SCREW	SHAPE	PART NUMBER
S1		QYSLSP2030D
S2		QYSLSF2055D
S3		QYSLSG2080D
S4		QYSLSF1750D
S5		SPSH1725M
S6		QYTPSP2006Z
S7		QYSPSPU1740Z
S8		QYSPSPU1720M
S9		YQ44457-3

Table 1-1-1

1.2 DISASSEMBLY/ASSEMBLY OF CABINET PARTS

1.2.1 Disassembly flow chart

This flowchart indicates the disassembly step for the cabinet parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.


① CASSETTE COVER ASSEMBLY
② TOP COVER
③ FRONT COVER ASSEMBLY
④ MICROPHONE
⑤ IR WINDOW
⑥ LOWER CASE ASSEMBLY
⑦ EVF ASSEMBLY
⑧ UPPER CASE ASSEMBLY
⑨ FRONT FRAME ASSEMBLY
⑩ OPERATION (CAMERA) BOARD ASSEMBLY

1.2.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CASSETTE COVER ASSEMBLY	C1	(S1), 3(L1), (L2) PUSH BUTTON *CONNECTOR Ⓐ	<NOTE 1> <NOTE 2>
②	TOP COVER	C2	(S2), 4(L3)	-
③	FRONT COVER ASSEMBLY	C3	4(S2), 3(L4) JACK COVER *CONNECTOR Ⓑ	<NOTE 1> <NOTE 3>
④	MICROPHONE	C3	(S2)	-
⑤	IR WINDOW	C3	3(L5)	-
⑥	LOWER CASE ASSEMBLY	C4	6(S2), 3(S3), (S4), 3(L6) *CONNECTOR Ⓒ	<NOTE 1>
⑦	EVF ASSEMBLY	C4	2(L7)	<NOTE4>
⑧	UPPER CASE ASSEMBLY	C5	4(S2), 4(L8)	-
⑨	FRONT FRAME ASSEMBLY	C5	3(S5), 2(S10) SHIELD PLATE SHIELD COVER	<NOTE 5>
⑩	OPERATION (CAMERA) BOARD ASSEMBLY	C6	4(S2)	-

List of Abbreviations:
(S1) = 1 Screw (S1)
4(S2) = 4 Screws (S2)
3(L1) = 3 Locking Tabs (L1)

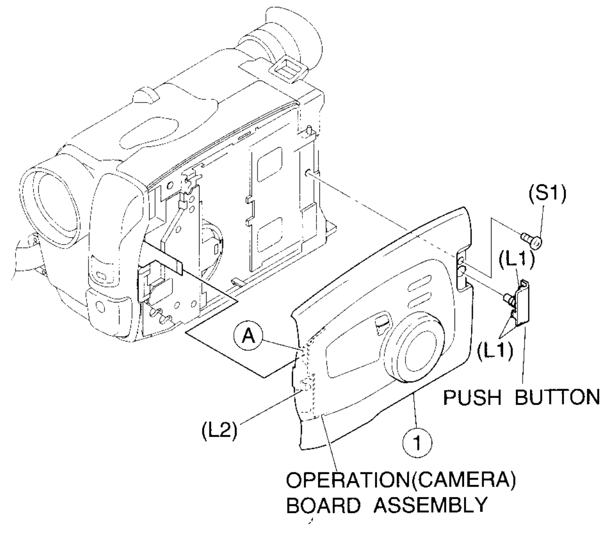

(S1)
(L1)
A
(L1)
PUSH BUTTON
(L2)
1
OPERATION(CAMERA)
BOARD ASSEMBLY

Fig. C1

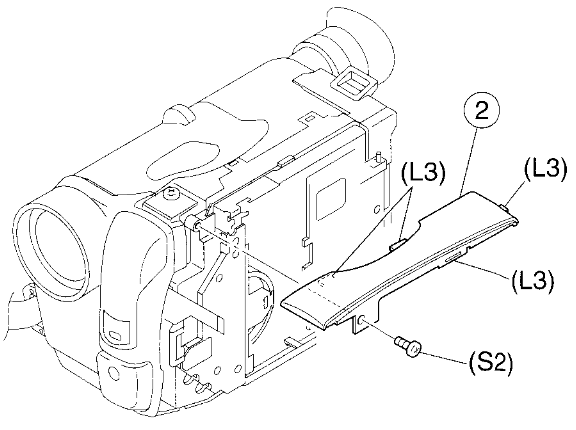


Fig. C2

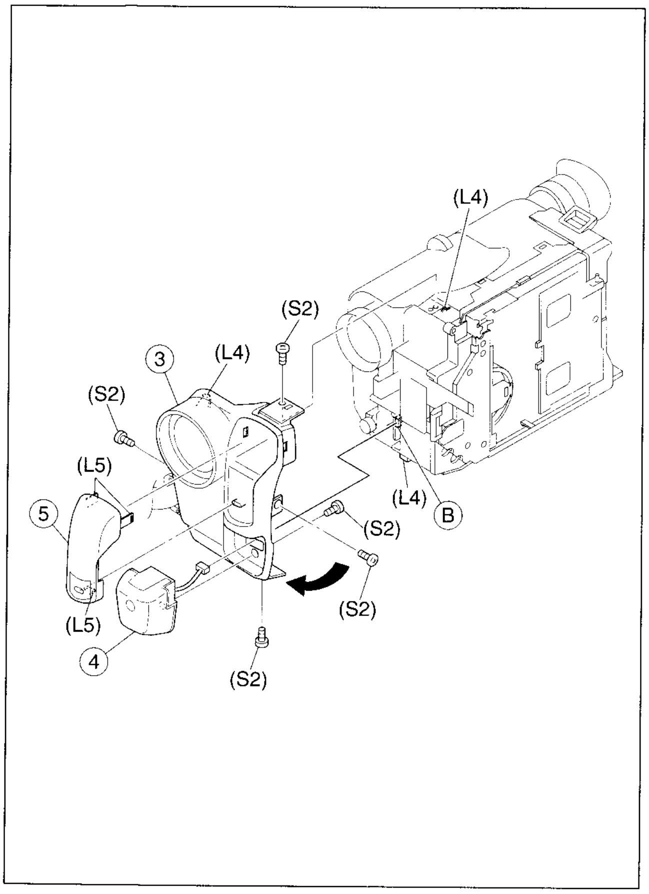

(L4)
(S2)
3
(L4)
(S2)
(L5)
5
(L4)
B
(S2)
(S2)
(L5)
4
(S2)

Fig. C3

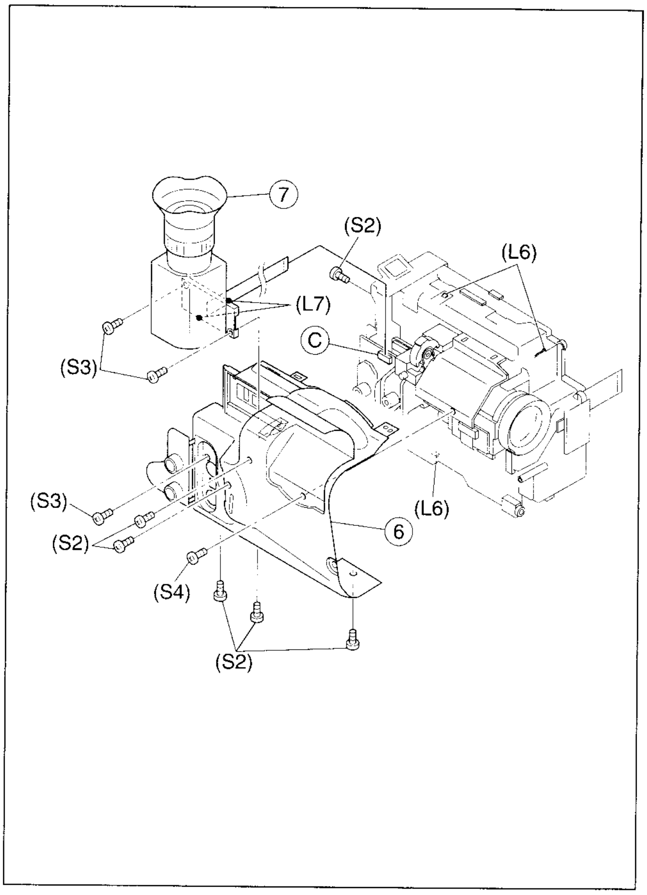

7
(S2)
(L6)
(L7)
(S3)
C
(S3)
(S2)
(S4)
6
(L6)
(S2)

Fig. C4

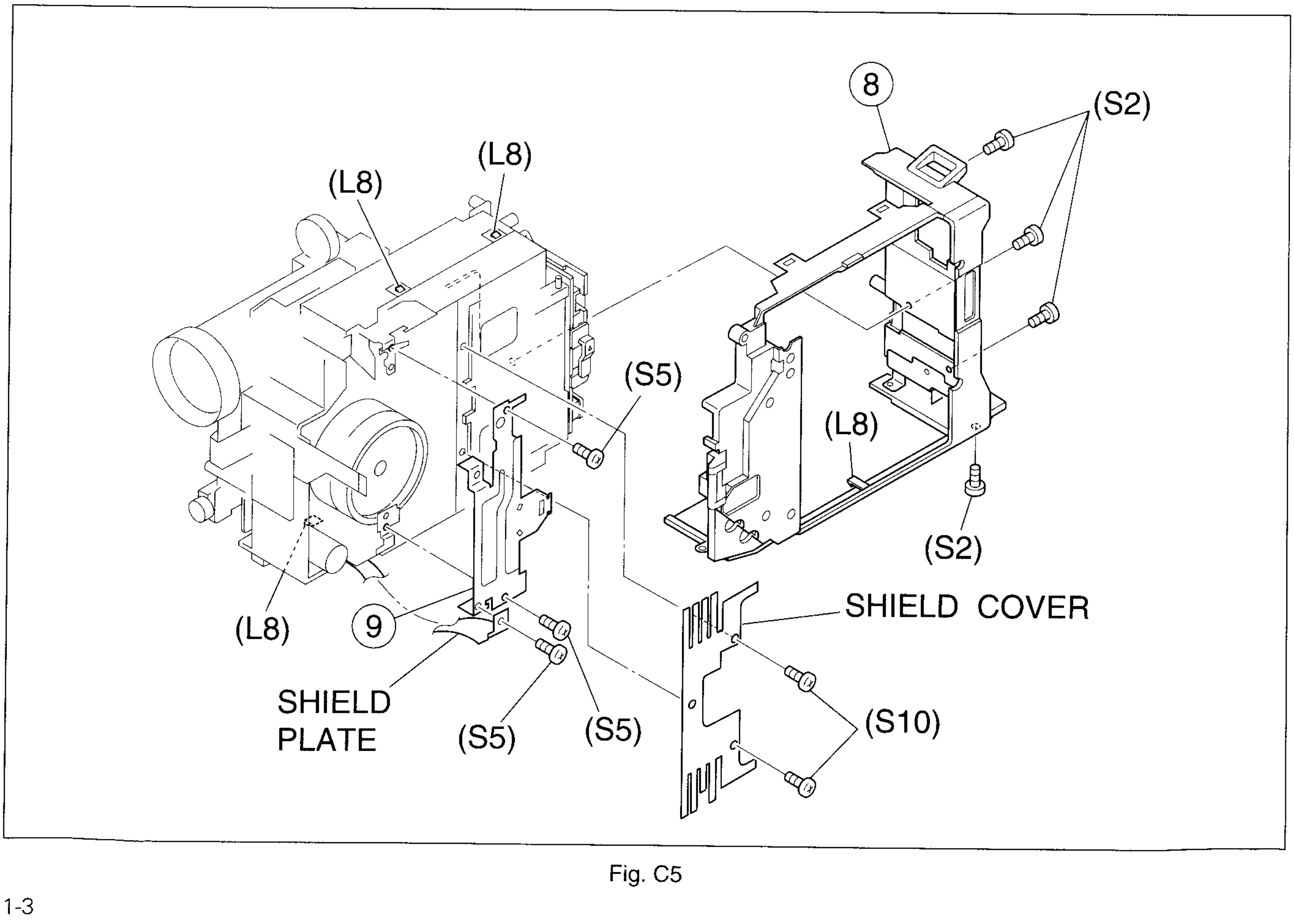

8
(S2)
(L8)
(L8)
(S5)
(L8)
(S2)
(L8)
9
SHIELD COVER
SHIELD PLATE
(S5)
(S5)
(S10)

Fig. C5

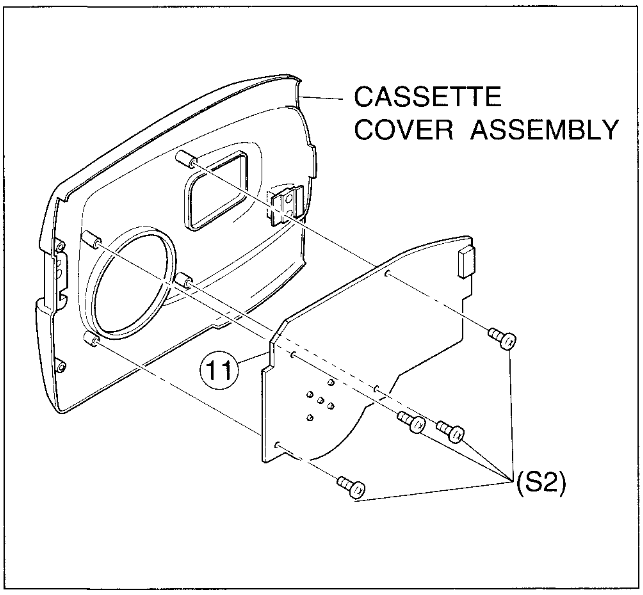


Fig. C6

Reference Notes:
<NOTE 1>
Destination of connectors

Note: *Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.*

⬌ : Board to Board connector
⇔ : Flat wire
↔ : Wire

Con-nector	No. of Pins	Connector
Ⓐ	7	OPERATION (CAMERA) ⇔ PROCESS CN203
Ⓑ	4	MIC ↔ AV/MS CN108
Ⓒ	11	EVF ⇔ PROCESS CN206

<NOTE 2>
First disconnect connector Ⓐ, then remove the cassette cover assembly ①.
<NOTE 3>
First remove the grip strap, then remove the front cover assembly ③.
<NOTE 4>

- First remove the lower case assembly ⑥, then remove the E. VF assembly ⑦.
- In this case, be careful so as not to cause any damage to the wire.

<NOTE 5>
First remove the shield plate and the shield cover, then remove the front frame assembly ⑨.

1.3 DISASSEMBLY/ASSEMBLY OF CAMERA PARTS

1.3.1 Disassembly flow chart

This flowchart indicates the disassembly step for the CAMERA parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.

① OPERATION (DECK) UNIT
↓
② OP BLOCK ASSEMBLY
↓
③ CCD IMAGE SENSOR

*Refer to section 1.6

1.3.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	OPERATION (DECK) UNIT	CA1	(S2), 3(L1) *CONNECTOR Ⓐ	<NOTE 1>
②	OP BLOCK ASSEMBLY	CA1	(S2), (S3), 2(S6) *CONNECTORS Ⓑ, Ⓒ	<NOTE 1> <NOTE 2>

List of Abbreviations:
(S2) = 1 Screw (S2)
3(L1) = 3 Locking Tabs (L1)

Reference Notes:
<NOTE 1>
Destination of connectors

Note: *Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.*

⬌ : Board to Board connector
⇔ : Flat wire
↔ : Wire

Con-nector	No. of Pins	Connector
Ⓐ	13	AV/MS CN105 ⇔ OPERATION (DECK)
Ⓑ	22	OP BLOCK ⇔ PROCESS CN201
Ⓒ	14	OP BLOCK ⬌ CCD CN5001

<NOTE 2>
Move the CCD board in the direction of the rear side. At that time, pay careful attention to pins (connector Ⓒ) of the CCD image sensor so as not to damage them.

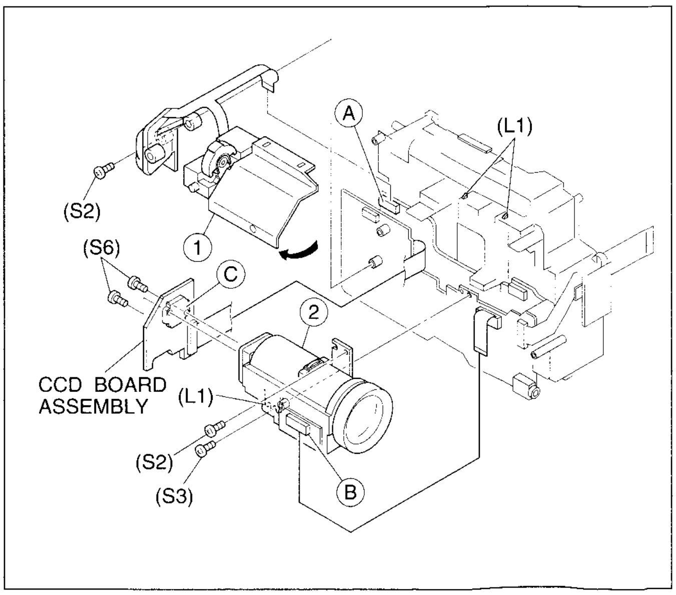
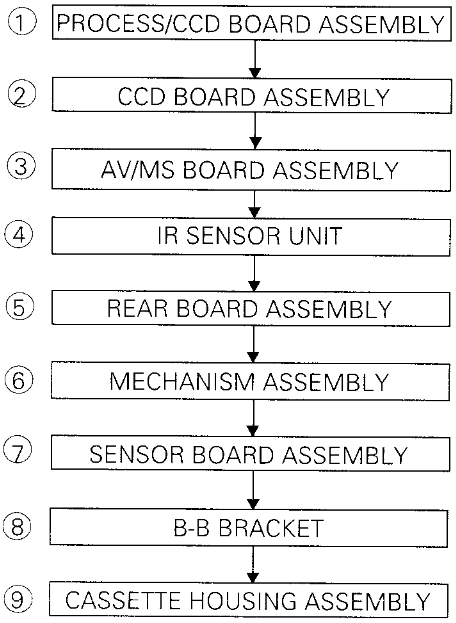


Fig. CA1

1.4 DISASSEMBLY/ASSEMBLY OF DECK PARTS

1.4.1 Disassembly flow chart

This flowchart indicates the disassembly step for the DECK parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.


① PROCESS/CCD BOARD ASSEMBLY
② CCD BOARD ASSEMBLY
③ AV/MS BOARD ASSEMBLY
④ IR SENSOR UNIT
⑤ REAR BOARD ASSEMBLY
⑥ MECHANISM ASSEMBLY
⑦ SENSOR BOARD ASSEMBLY
⑧ B-B BRACKET
⑨ CASSETTE HOUSING ASSEMBLY

1.4.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
① / ②	PROCESS/CCD BOARD ASSEMBLY	D1	(L1) *CONNECTOR Ⓐ,Ⓑ	<NOTE 1>
③	AV/MS BOARD ASSEMBLY	D1	2(S4), (L2) *CONNECTOR Ⓒ, Ⓓ, Ⓔ, Ⓔ	<NOTE 1>
④	IR SENSOR UNIT	D1	2(L3)	–
⑤	REAR BOARD ASSEMBLY	D1	2(L4)	–
⑥	MECHANISM ASSEMBLY	D1	3(S4)	–
⑦	SENSOR BOARD ASSEMBLY	D1	4(S7), (S8) FRAME ASSEMBLY, *CONNECTORS Ⓖ,Ⓗ,Ⓙ,Ⓚ,Ⓛ	<NOTE 1> <NOTE 2>
⑧	B-B BRACKET	D1	(S7)	–
⑨	CASSETTE HOUSING ASSEMBLY	D2	4(S9)	–

List of Abbreviations:
2(S4) = 2 Screws (S4)
(L1) = 1 Locking Tab (L1)

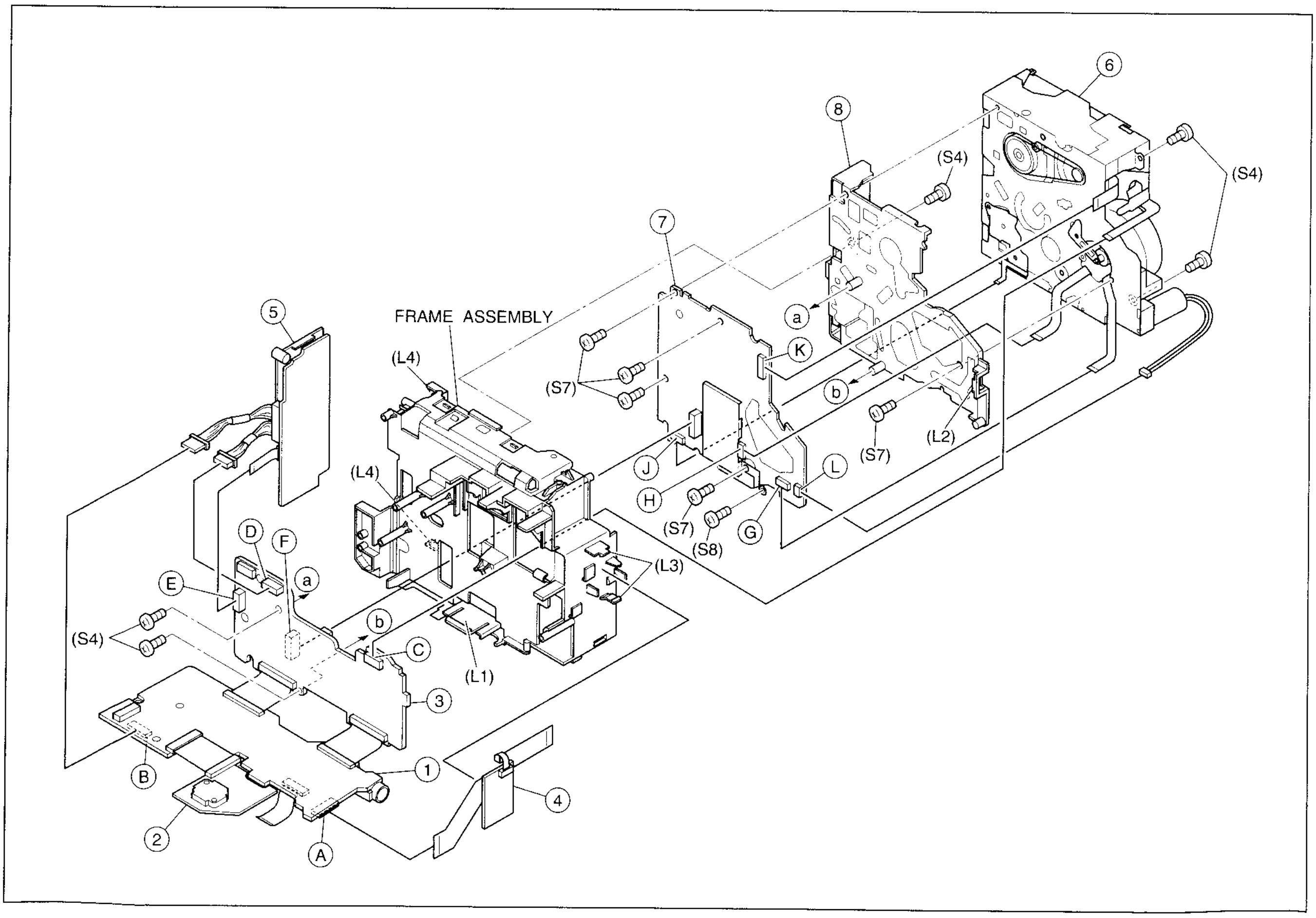

⑥
⑧
(S4)
(S4)
⑦
FRAME ASSEMBLY
⑤
(L4)
(S7)
ⓐ
Ⓚ
ⓑ
(S7)
(L2)
(L4)
Ⓙ
Ⓛ
Ⓗ
(S7)
(S8)
Ⓖ
(L3)
Ⓓ
Ⓕ
ⓐ
Ⓔ
(S4)
ⓑ
Ⓒ
(L1)
③
①
④
Ⓑ
②
Ⓐ

Fig. D1

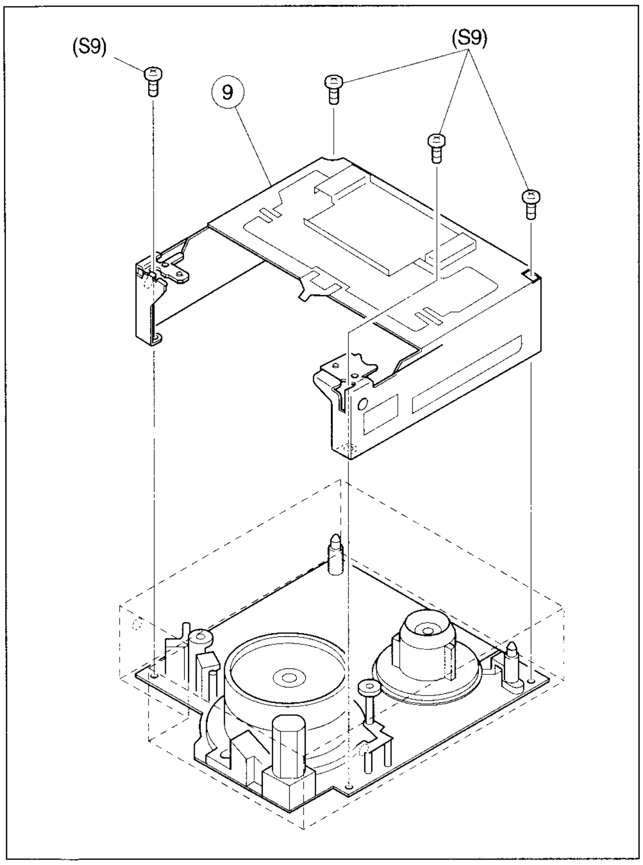


Fig. D2

Reference Notes:
<NOTE 1>
Destination of connectors

Note: *Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.*

⬌ : Board to Board connector
⇔ : Flat wire
↔ : Wire

Connector	No. of Pins	Connector
Ⓐ	22	PROCESS CN203 ⇔ IR SENSOR UNIT
Ⓑ	7	PROCESS CN204 ↔ REAR CN601
Ⓒ	11	AV/MS CN107 ⬌ A/C HEAD
Ⓓ	7	AV/MS CN104 ↔ REAR CN601
Ⓔ	8	AV/MS CN106 ⇔ REAR CN602
Ⓕ	50	AV/MS CN101 ⬌ SENSOR CN6
Ⓖ	10	SENSOR CN1 ⇔ DRUM MOTOR
Ⓗ	11	SENSOR CN5 ⇔ VIDEO HEAD
Ⓙ	6	SENSOR CN2 ⇔ ROTARY ENCODER UNIT
Ⓚ	18	SENSOR CN3 ⇔ CAPSTAN MOTOR
Ⓛ	2	SENSOR CN4 ↔ LOADING MOTOR

<NOTE 2>
The center PWB should be mounted so carefully as not to cause any damage to the cassette switch.
In this case, this PWB should be mounted under the condition of "C. HOUSING UP" ([EJECT] mode).

1.5 TO TAKE OUT CASSETTE TAPE

In the event that the set enters the emergency mode as it is loaded with a cassette tape and the cassette tape cannot be ejected with the EJECT button, manually, take it out of the set according to the following procedure.

Note: ***If the mechanism comes into the unloading mode as the cassette tape is not held by hand, it results in tape damage.***

1. Disconnect the set from the power source.
2. Remove the push button and one screw (S1), open the cassette cover assembly and disconnect connector Ⓐ . (See Fig. C1 on page 1-2)
3. Remove the one screw (S2) then remove the top cover. (See Fig. C2 on page 1-2) In this case the shield cover is installed on the cassette housing assy, take out 2 screws then remove the shield cover.
4. Connect a jumper wire to each pole of the loading motor as shown by the magnified view ⓑ (Fig. 1-5-1).
5. While holding down the cassette housing by hand, connect the jumper wires to a battery to run the mechanism to the EJECT position four unloading. If this unloading operation is performed as the cassette housing is not held down by hand, the front lid of the cassette may damage the tape when it is ejected.
6. For taking in the slack of the tape, run the mechanism to the EJECT position as the front lid of the cassette is left open, and turn the take-up reel in the forward direction to wind up the tape. After confirming that the tape has completely been wound up and the supply reel is idling, take the cassette tape out of the cassette housing.

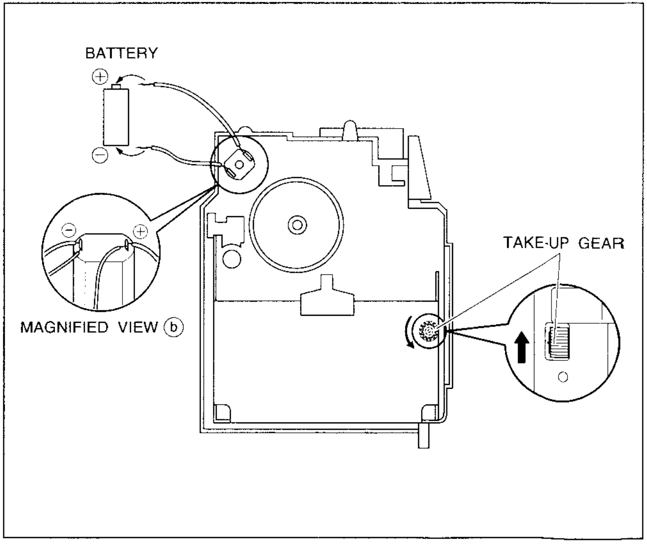


Fig. 1-5-1

1.6 REPLACEMENT OF CCD IMAGE SENSOR

Notes:

- *Pay the most careful attention to the transparent glass and optical LPF of the CCD image sensor so a not the soil and damage them. If something is soiled with finger-prints, etc., gently clean it with silicon-processed paper/cloth or chamois.*
- *When the CCD image sensor is shipped from the factory, there are protection seals applied onto the transparent glass. Leave the protector as it is, and take it off just before assembling the CCD image sensor to the OP block.*

1.6.1 Removal of CCD image sensor

1. Remove two screws Ⓐ securing the CCD base, and disassemble the CCD spacer, the optical LPF, spacer rubber.

1.6.2 Installation of new CCD image sensor

1. Remove the protection seal from a new CCD image sensor. Next, put the spacer rubber, optical LPF, CCD spacer on the CCD image sensor as they are piled up in this order. At that time, make sure of orientation of each item refering to the following table (see Fig. 1-6-1).

Part Name	Orientation
CCD image sensor	Mark is on the right viewed as indicated by the arrow ⓐ .
Spacer rubber	IC side is horizontal.
Optical LPF	Marks are on the left and bottom viewed as indicated by the arrow ⓐ .

2. Fix the CCD base to OP block with the two screws Ⓐ . At that time, be careful of the orientation.
3. After completion of all P.C. boards to the camera section, observe the monitor to confirm no vignetting caused by the bodytube, rings, lens hood, etc. If no vignetting is observed, it can be said that image's parallel, horizontality and centering are correct.

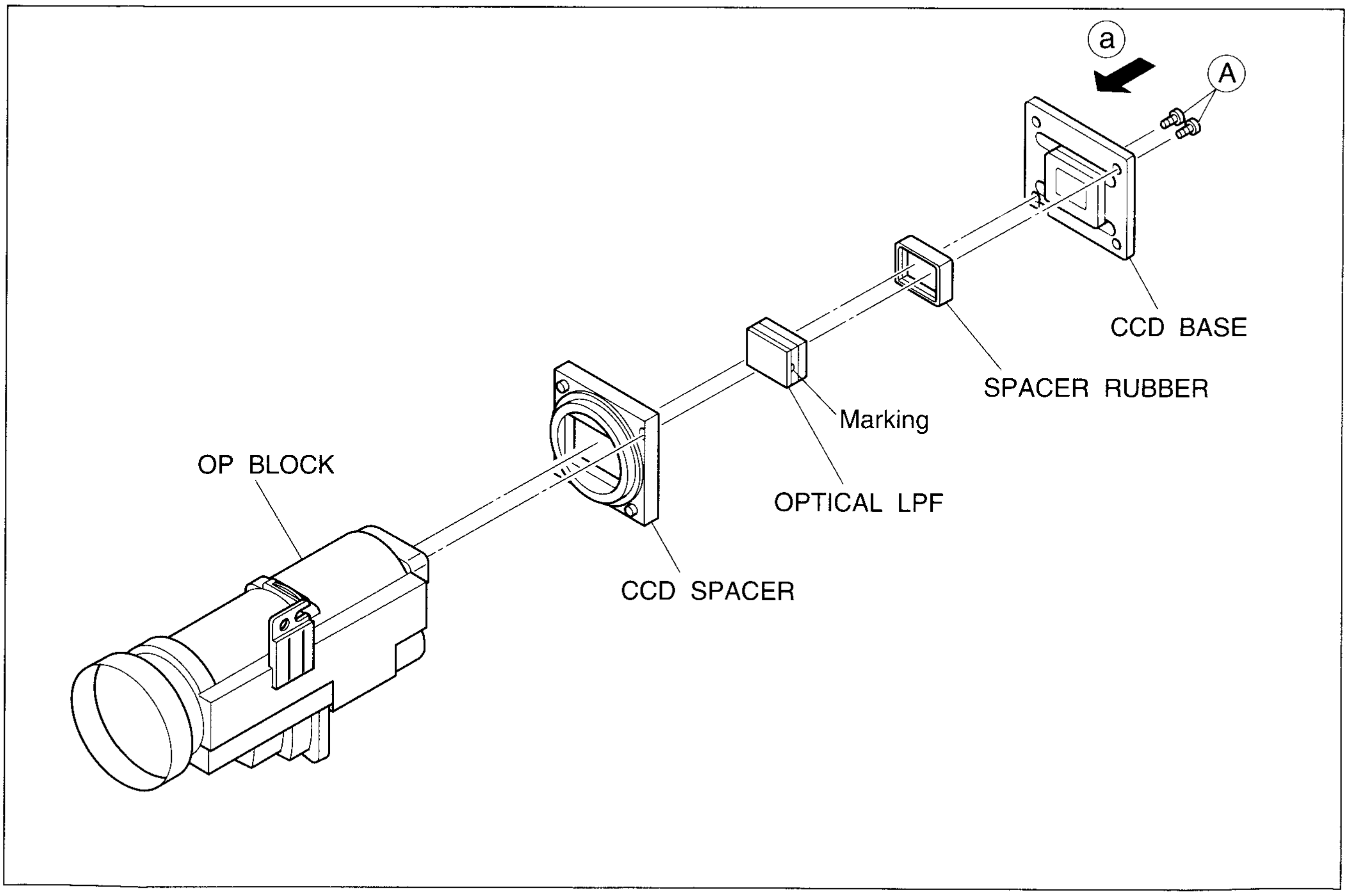


Fig. 1-6-1 CCD image sensor

1.7 EXTENSION CABLE CONNECTION

Connector	Pins	Connection	Part Number	Description
①	11	AV/MS CN107 ↔ A/C HEAD	YTU94077-11 YTU94074-11	–
②	4	AV/MS CN108 ↔ MIC	YUJ40095A-4	–
③	22	PROCESS CN203 ↔ IR SENSOR UNIT	YTU94077-22 YTU94074-22	–
④	22	PROCESS CN201 ↔ OP BLOCK	YTU94077-22 YTU94074-22	–
⑤	11	PROCESS CN206 ↔ E. VF	YTU94077-11 YTU94074-11	–
⑥	8	AV/MS CN106 ↔ REAR CN602	YTU94077-8 YTU94074-8	–
⑦	7	AV/MS CN104 ↔ REAR CN601	YUJ40095A-7	–
⑧	13	AV/MS CN105 ↔ OPERATION (DECK) UNIT	YTU94077-13 YTU94074-13	–
⑨	50	AV/MS CN101 ↔ SENSOR CN6	PEMCJ1202-050	–

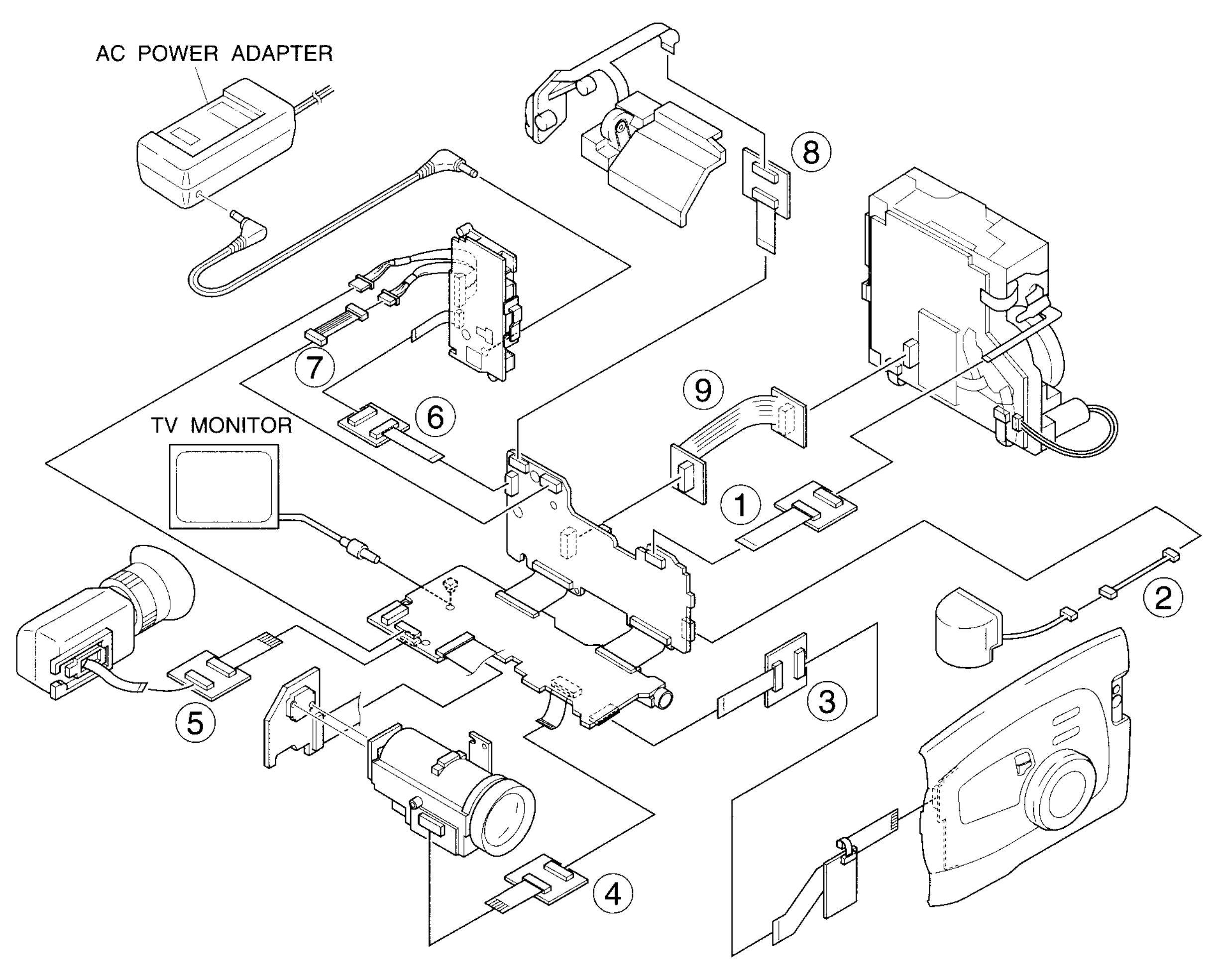


Fig. 1-7-1 EXTENSION CABLE CONNECTION

SECTION 2
MECHANISM ADJUSTMENT

2.1 SERVICE CAUTIONS

2.1.1 Precautions

1. Before disassembling/re-assembling the set as well as soldering parts, make sure to disconnect the power cable.
2. When disconnecting/connecting connectors, pay enough attention to wiring not to damage it.
3. When installing parts, be careful not to do with other parts as well as not to damage others. (Pay the most careful attention to the upper drum assy and tape transport mechanism.)

2.1.2 How to read the disassembly and assembly (For Mechanism Parts)

①: Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.

②: Part to be removed or installed.

③: Location of part.
T = Top
B = Bottom

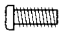
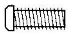
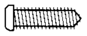
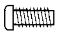
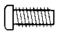
④: Fig. No. showing Procedure or Part Location.
M = Mechanism

⑤: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
P = Spring
W = Washer
S = Screw
* = Unhook, unlock, release, unplug or unsolder.

⑥: Adjustment information for installation.
(+) = Refer to Exploded Views for Lubrication information.

2.1.3 Main screws and washers to deal with disassembly/assembly

Table 2-1-1 lists screws and washers by their symbols which correspond to those shown in figures of this section "Disassemby and Assembly".

SYMBOL OF SCREW	SHAPE	PART NUMBER
S1		YQ44457
S2		YQ44457-3
S3		YQ44457-2
S4		SPSN1750Z
S5		YQ44304
S6		YQ44460
S7		SPSH1730C
S8		SPSH1740Z
S9		YQ44457-5
S10		SPSH1730M

SYMBOL OF WASHER	SHAPE	PART NUMBER
W1		PQM30017-27
W2		Q03093-835
W3		PQM30017-25

Table 2-1-1

(For Mechanism Parts)

STEP/LOC. No.	PART		Fig. No.	REMOVAL	INSTALLATION
				*UNHOOK/UNLOCK /RELEASE/UNPLUG /UNSOLDER	ADJUSTMENT CONDITION NOTE
①	ROLLER BASE ASSEMBLY	T	M1	(S1)	–
②	TENSION ARM ASSEMBLY	T	M1	(P1), (W1)	–
③	REEL DISK (SUP)	T	M1	(W1), (W2)	–
④	SLANT ARM ASSEMBLY	T	M1	(W1)	–
⑤	CANCEL LEVER ASSEMBLY	T	M2	(W1)	–
⑥	EJECT LEVER ASSEMBLY	T	M2	(W1)	–
⑦	CASSETTE GUIDE (L) ASSEMBLY	T	M2	(S1)	–

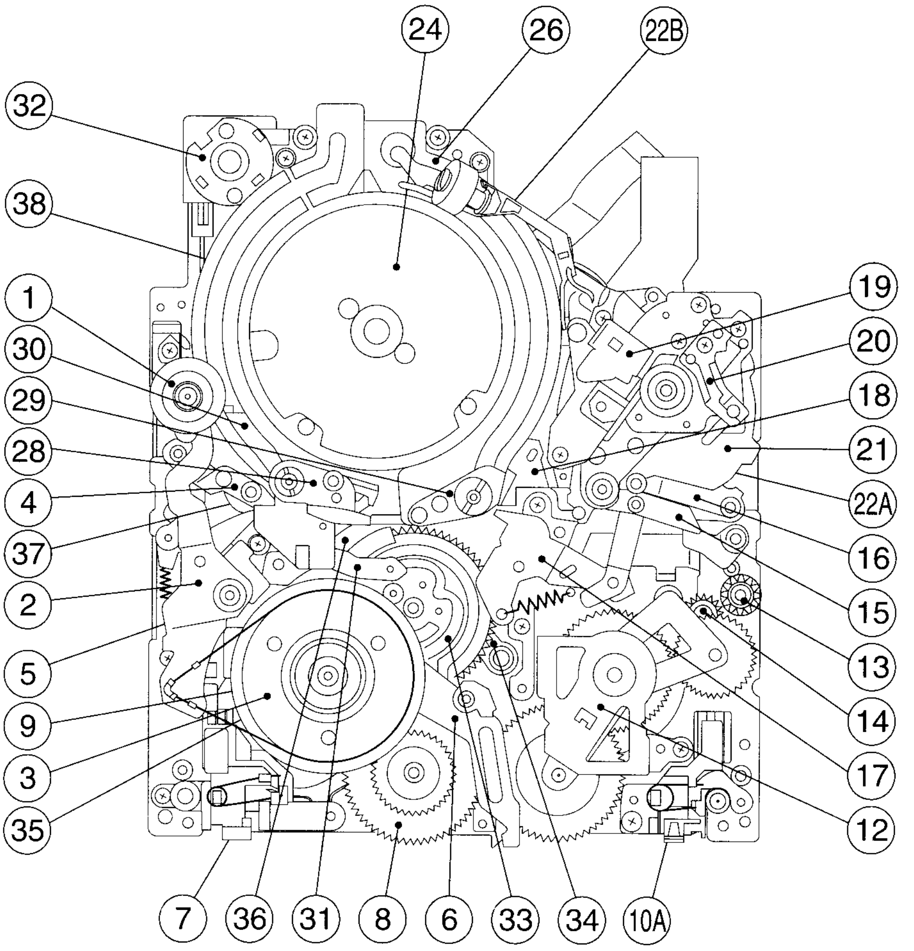
① ② ③ ④ ⑤ ⑥

2.2 DISASSEMBLY/ASSEMBLY OF MECHANISM PARTS

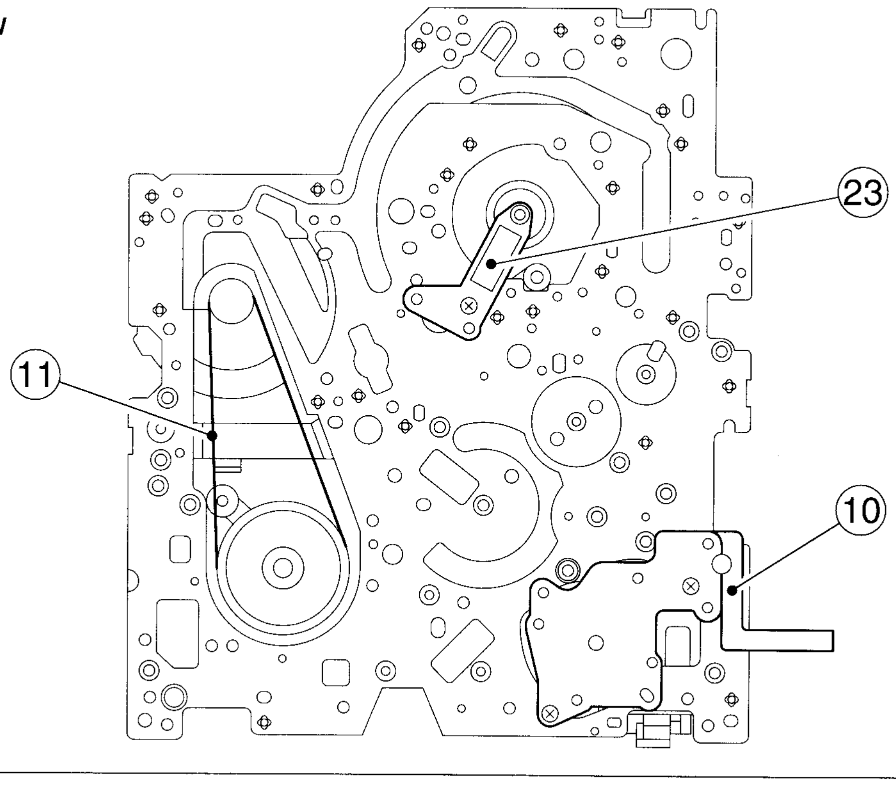
This procedure starts with the condition that the cabinet parts and deck parts. Also, all the following procedures for adjustment and parts replacement should be performed in STOP mode. When reassembling, perform the step(s) in the reverse order.

STEP/LOC. No.	PART		Fig. No.	REMOVAL	INSTALLATION
				*UNHOOK/UNLOCK /RELEASE/UNPLUG /UNSOLDER	ADJUSTMENT CONDITION NOTE
①	ROLLER BASE ASSEMBLY	T	M1	(S1)	–
②	TENSION ARM ASSEMBLY	T	M1	(P1), (W1)	–
③	REEL DISK (SUP)	T	M1	(W1), (W2)	–
④	SLANT ARM ASSEMBLY	T	M1	(W1)	–
⑤	CANCEL LEVER ASSEMBLY	T	M2	(W1)	–
⑥	EJECT LEVER ASSEMBLY	T	M2	(W1)	–
⑦	CASSETTE GUIDE (L) ASSEMBLY	T	M2	(S1)	–
⑧	SUPPLY CLUTCH ASSEMBLY	T	M2	(W1)	–
⑨	WHEEL GEAR	T	M2	(W1)	See, Adjustment procedure for Section 2.4
⑩	ROTARY ENCODER	B	M3	2(S10)	–
(10A)	CASS. GUIDE(R) ASSEMBLY	T	M3	(S1)	–
⑪	TIMING BELT	B	M3	–	–
⑫	CENTER PULLEY UNIT	T/B	M3	2(S3)	–
⑬	TU GEAR	T	M3	(W1)	–
⑭	BRAKE SUB GEAR	T	M3	(W1)	–
⑮	P.R ARM ASSEMBLY	T	M3	(W3)	–
⑯	TU GUIDE ARM ASSEMBLY	T	M3	(W1)	–
⑰	LINK ARM ASSEMBLY	T	M4	(W3)	–
⑱	LED GUIDE	T	M4	(S1)	–
⑲	A/C HEAD UNIT	T	M4	2(S4)	–
⑳	SLANT POLE BASE ASSEMBLY	T	M5	(S5)	–
㉑	CAP MOTOR ASSEMBLY	T	M5	3(S5)	–
(22A)	MOTOR BASE	T	M5	2(S1), (S6)	–
(22B)	CLEANER ASSEMBLY	T/B	M5	2(S2), (L1)	
㉓	BRUSH	B	M6	(S2)	–
㉔	DRUM FINAL	T/B	M6	2(S1), 2(S8), *CATCHER	–
㉖	GUIDE RAIL	T	M6	2(S7), 6(S9)	–
㉘	POLE BASE (SUP)	T	M6	–	–
㉙	POLE BASE (TU)	T	M6	–	–
㉚	COVER PLATE	T	M7	–	–
㉛	DRIVE LEVER ASSEMBLY	T	M7	–	–
㉜	MOTOR BRACKET ASSEMBLY	T	M7	3(S1)	–
㉝	CONTROL CAM	T	M8	(W3)	See, Adjustment procedure for Section 2.4
㉞	LINK LEVER	T	M8	–	–
㉟	MIDDLE GEAR	T	M8	–	–
㊱	LOADING GEAR(T) ASSEMBLY	T	M8	(W1)	See, Adjustment procedure for Section 2.4
㊲	LOADING GEAR(S) ASSEMBLY	T	M8	(W1)	–
㊳	LOADING RING ASSEMBLY	T	M8	4(S1)	See, Adjustment procedure for Section 2.4

TOP VIEW


24
26
22B
32
38
1
30
29
28
4
37
2
5
9
3
35
19
20
18
21
22A
16
15
13
14
17
12
7
36
31
8
6
33
34
10A

BOTTOM VIEW



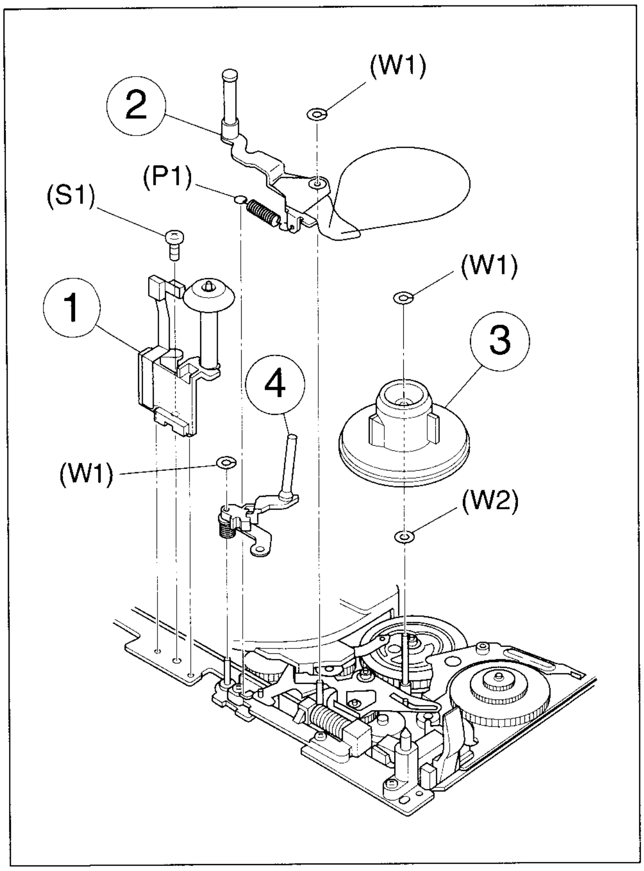

(W1)
2
(P1)
(S1)
(W1)
1
3
4
(W1)
(W2)

Fig. M1

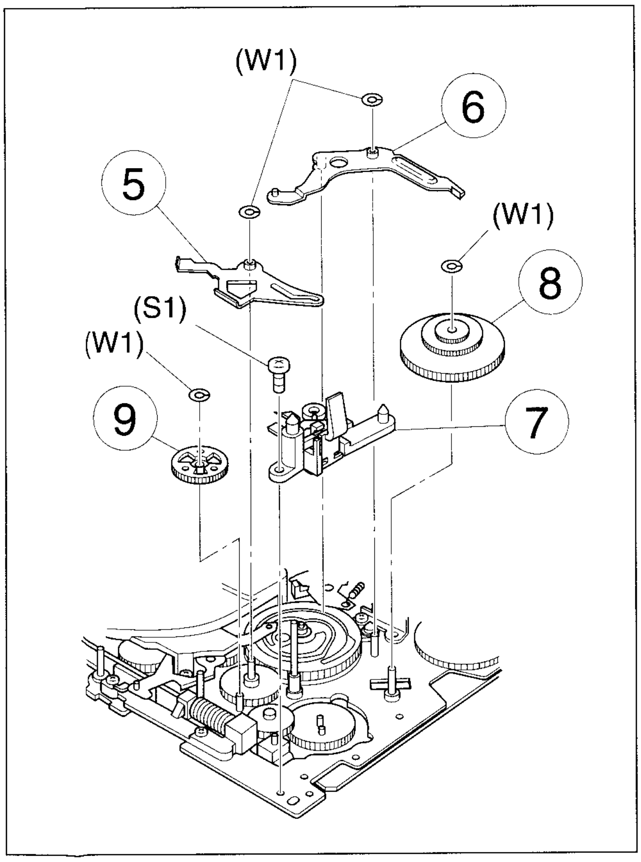

(W1)
6
5
(W1)
8
(S1)
(W1)
9
7

Fig. M2

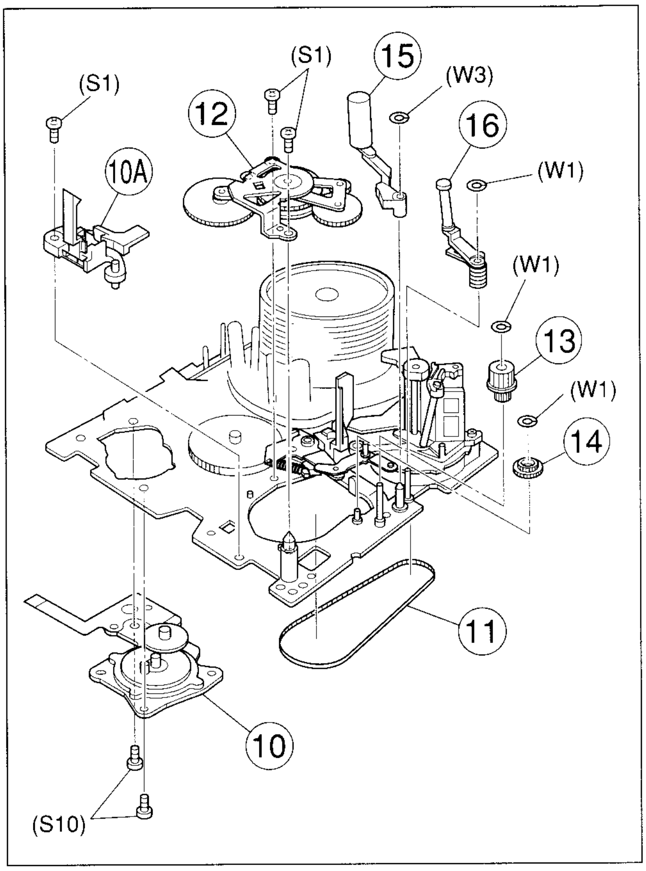

(S1)
(S1)
15
(W3)
12
16
10A
(W1)
(W1)
13
(W1)
14
11
10
(S10)

Fig. M3

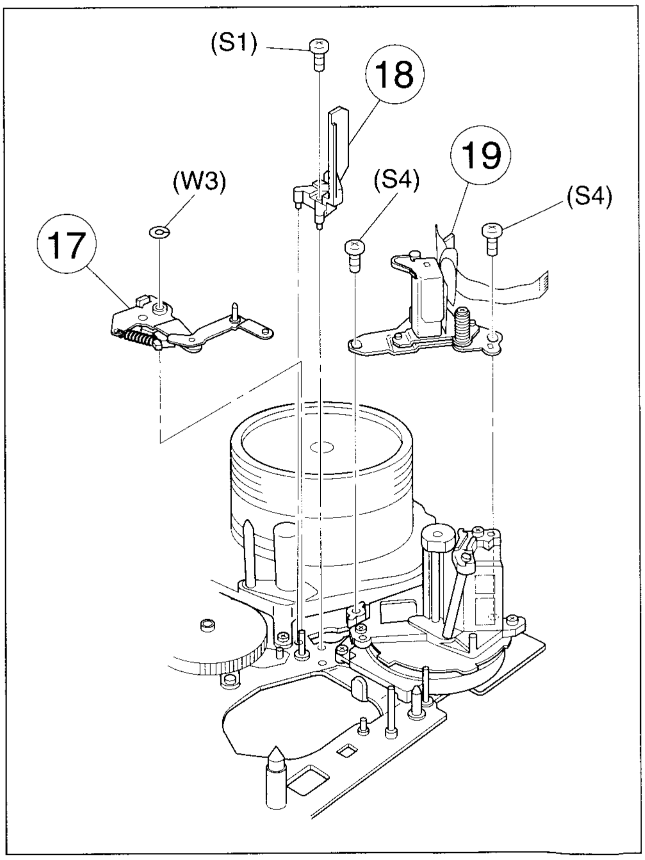

(S1)
18
19
(W3)
(S4)
(S4)
17

Fig. M4

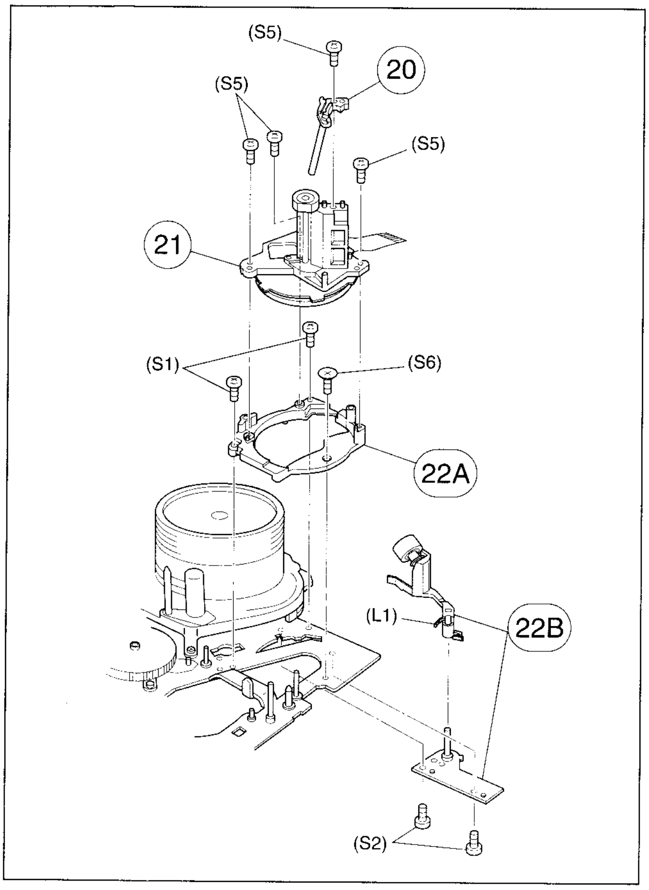

(S5)
20
(S5)
(S5)
21
(S1)
(S6)
22A
(L1)
22B
(S2)

Fig. M5

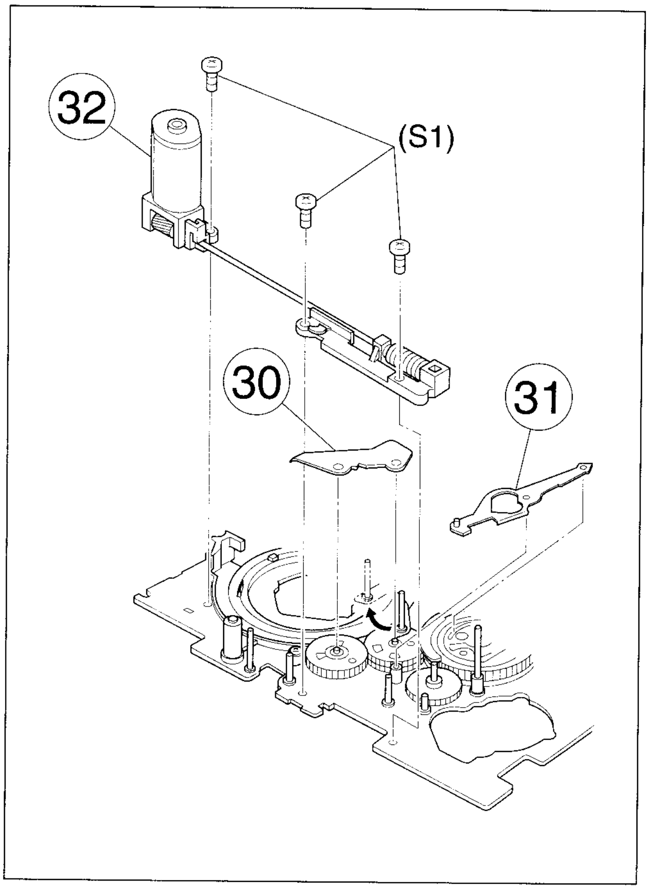


Fig. M7

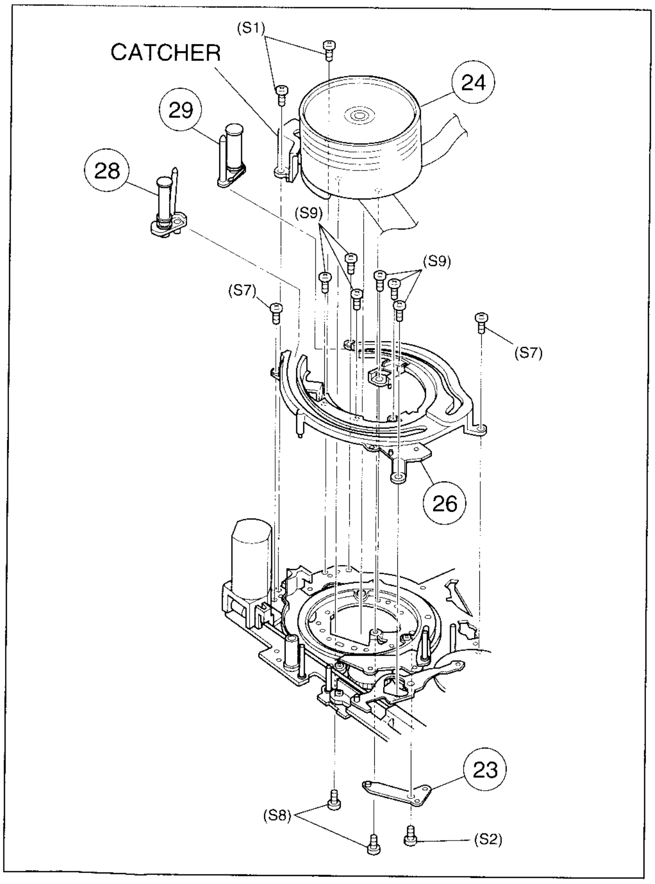

(S1)
CATCHER
24
29
28
(S9)
(S9)
(S7)
(S7)
26
23
(S8)
(S2)

Fig. M6

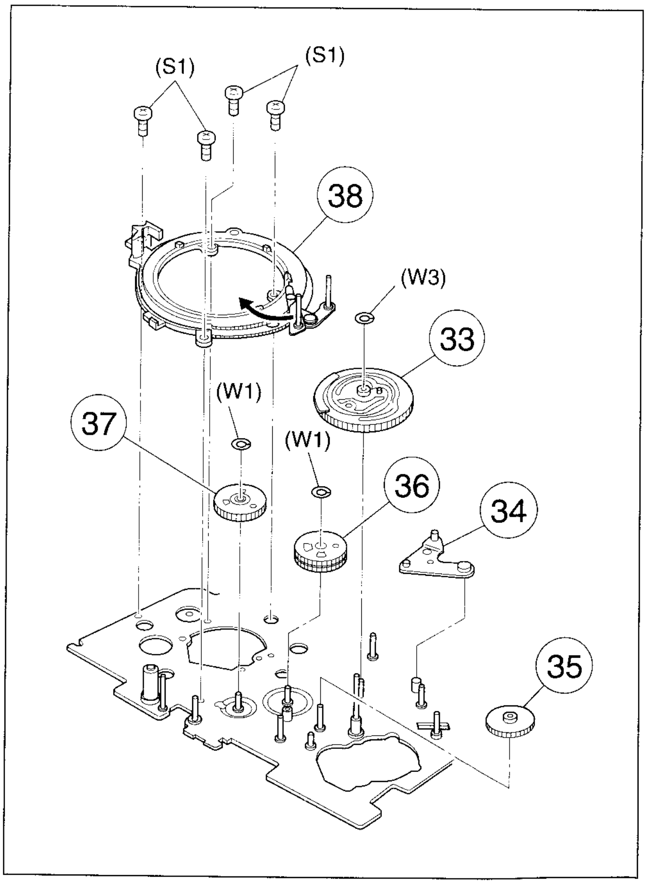

(S1)
(S1)
38
(W3)
33
(W1)
37
(W1)
36
34
35

Fig. M8

2.3 REPLACEMENT OF UPPER DRUM

Note: *Be very careful not to touch any hand of a new upper drum as well as not to damage the drum.*

2.3.1 Removal of upper drum

1. Carefully unsolder at 10 points shown in Fig. 2-3-1 on the UPPER DRUM board.

   Note: *If solder is not completely removed, it may cause damage of the head pins when the upper drum is removed.*

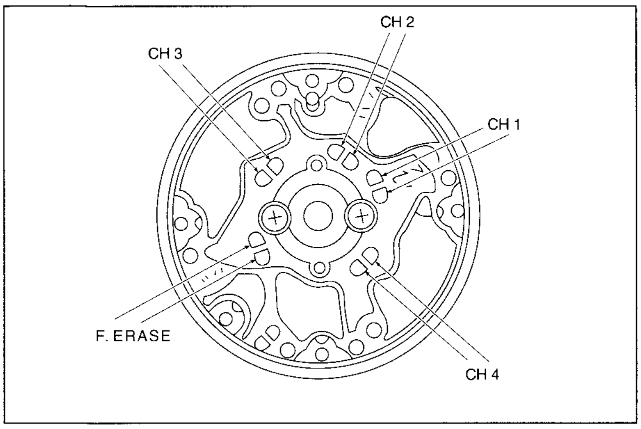


Fig. 2-3-1 Upper drum replacement (1)

2. Remove two screws and draw out the upper drum in the direction of the arrow.

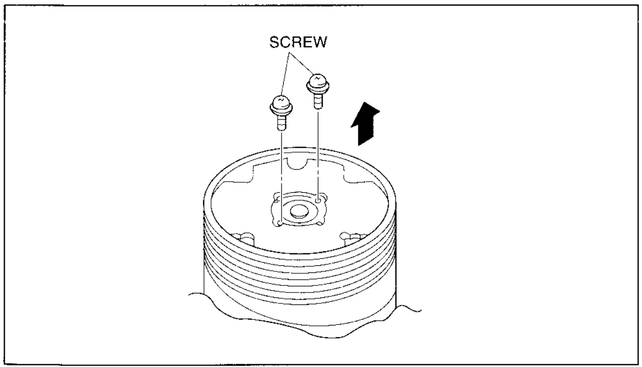


Fig. 2-3-2 Upper drum replacement (2)

3. When it is hard to remove the upper drum, set the upper drum removal tool (YTU94031A) with the screws which are once removed in the step 2, and tighten the center screw to remove it easily.

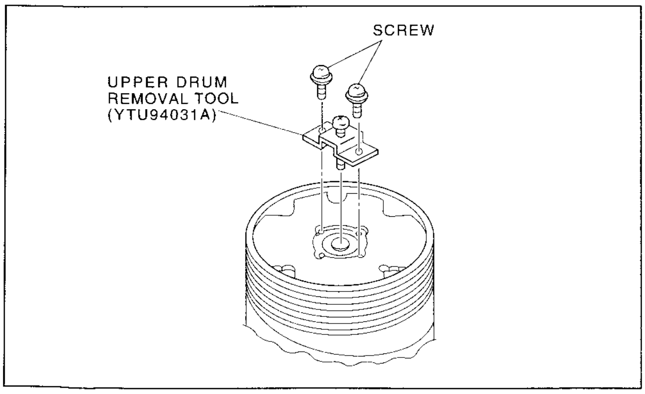


Fig. 2-3-3 Upper drum replacement (3)

2.3.2 Installation of new upper drum

1. Before installing a new upper drum, insert a soldering iron (50 W) into the hole of the upper drum and heat it for about 3 to 5 minutes to expand it.

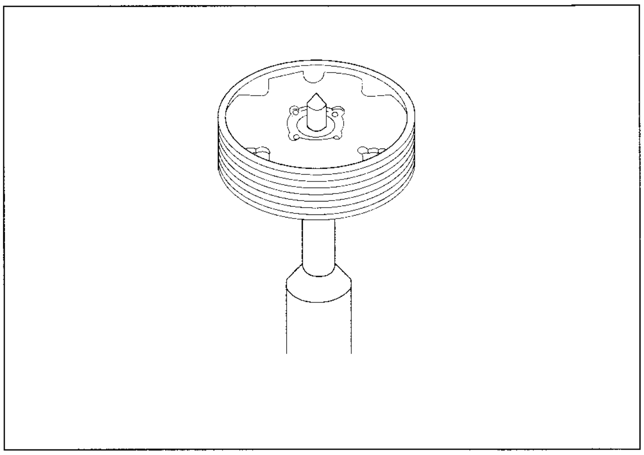


Fig. 2-3-4 Upper drum replacement (4)

2. Install the new upper drum so that its arrow marking is positioned at an angle of 140° to the rotary transformer's mold (having no relay pin) of the lower drum.

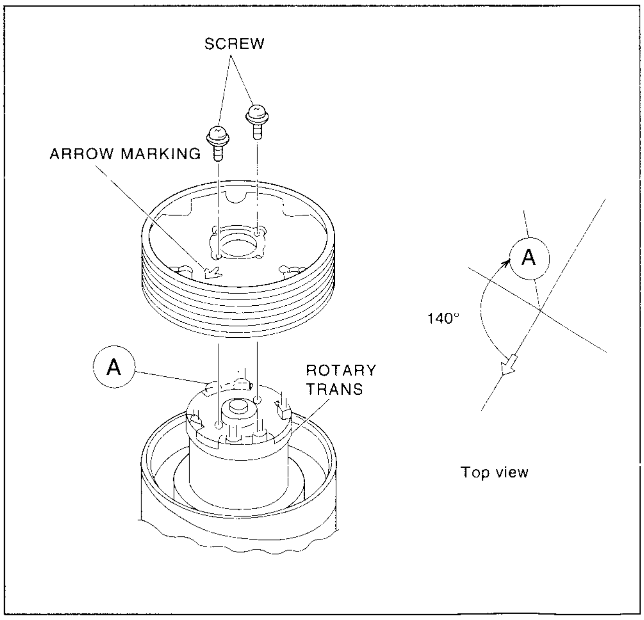


Fig. 2-3-5 Upper drum replacement (5)

3. Tighten the screws lightly first, then, alternately tighten them gradually as the upper drum is cooled.
4. After replacement finishes, make sure to check up and deck section adjustment.

2.4 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE

Note: *Pay careful attention to the installing order and phase of mechanism parts of the loading system.*

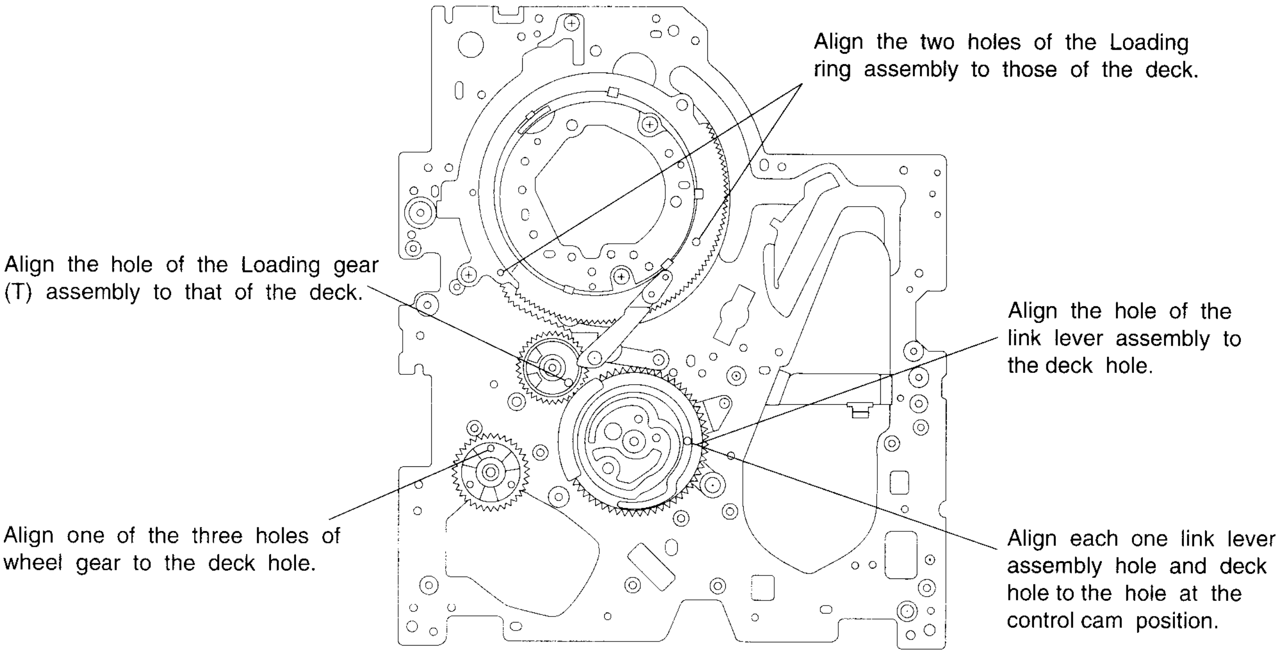

Align the two holes of the Loading ring assembly to those of the deck.
Align the hole of the Loading gear (T) assembly to that of the deck.
Align the hole of the link lever assembly to the deck hole.
Align one of the three holes of wheel gear to the deck hole.
Align each one link lever assembly hole and deck hole to the hole at the control cam position.

Fig. 2-4-1 TOP OF MAIN DECK

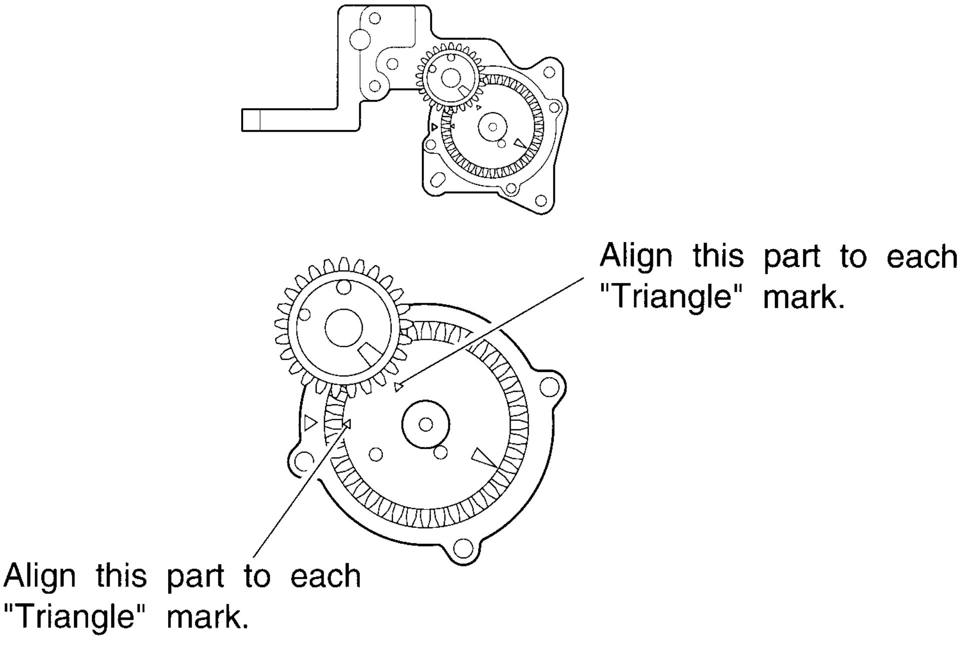

Align this part to each "Triangle" mark.
Align this part to each "Triangle" mark.

Fig. 2-4-2 ROTARY ENCODER

2.5 TAPE TRANSPORT ADJUSTMENT

In most cases the deck section is in need electrical adjustment, it results from replacement of worm mechanical parts or video heads. In the event of malfunction with electrical circuits, troubleshouting with the aid of proper test instruments most be done first, and then commence necessary repair, replacement and adjustment, etc.

2.5.1 Required adjustment tools

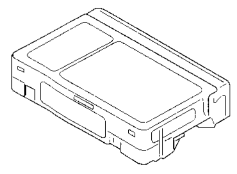
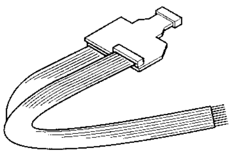
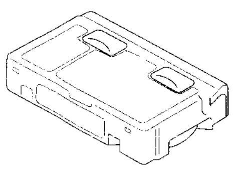
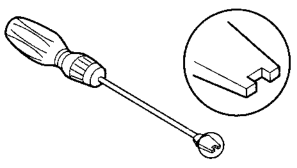
Alignment tape for SP/LP interchangeability MHPE-C: SP	PATCH CORD YTU93082A
	
Cassette torque meter PUJ50431-2	Roller driver PTU94002-2
	

Table 2-5-1

2.5.2 Back tension

1. Set a cassette torque meter onto the deck and measure the back tension in standard REC mode to confirm that the back tension is 9.5 – 17.5 gf•cm.
2. If not, replace the tension band.
   When the value widely fluctuates in the measurement, replace the supply reel disk.
3. With the cassette torque meter, confirm that the play torque is 15 – 25 gf•cm.
   If necessary, replace the centre pully unit.

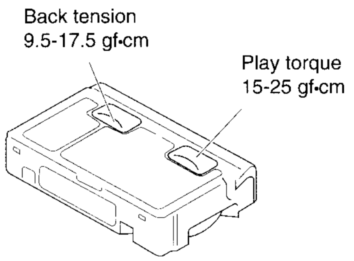


Fig. 2-5-1 Cassette torque meter

2.5.3 Tape pattern

1. Remove the one screw Ⓐ and remove the connector cover Ⓑ of the upper case assembly as shown on Fig. 2-7-1 (Page 2-11).
2. Connect the patch cord (YTU93082A) to CN207 on the PROCESS board.
3. Observe signal at pin 3 of CN1 (V. TP FM) with external trigger from pin 6 of CN1 (V. FF) on the patch cord.
4. Play back the SP stairstep signal of the alignment tape, and maximize the FM waveform by the tracking button.
5. Set the tracking control to the center position by simultaneously pressing the tracking (-) and (+) buttons and maximize the FM waveform by the tracking button.
6. If the observed FM waveform is not flat, adjust the height of the supply of take-up guide roller with the roller driver (PTU94002).

   Note: *To prevent the tape from damage, turn the guide rollers slowly.*

7. By operating the tracking button (both in + and – directions) in the manual tracking mode, vary the output level of the FM waveform from maximum to minimum and vice versa to confirm that the waveform varies nearly in a flat shape.
8. When the FM waveform breaks in the level varying process, subtly adjust the height of guide rollers at every breaking point so that the waveform varies as flat as possible.
   Repeat the above steps 6. and 7. several times to confirm that the waveform is flat as a whole.
9. Record the signal and play it back in the SP mode, and confirm that the FM waveform is flat in SP mode.

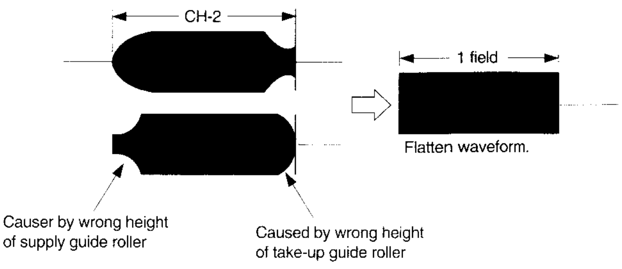


Fig. 2-5-2 FM waveform-1

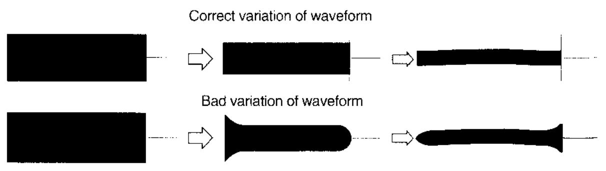


Fig. 2-5-3 FM waveform-2

11. Through the above steps, confirm that there occur no wrinkling and damage in the tape around the pinch roller and TU guide pole whenever the deck is in operation of Loading/Unloading, Search Rewind and at mode change from Search Rewind to play mode. If wrinkling or damage in the tape occurs around the TU guide pole, adjust the angle (slant) of the A/C head to the tape. So that the tape normally runs along the lower flange of the guide pole.

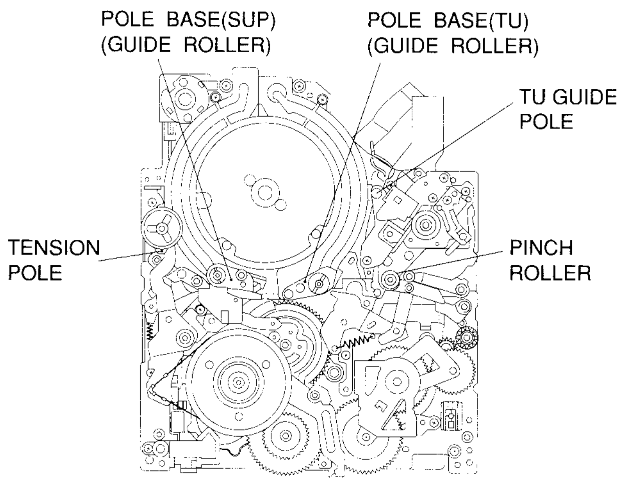

POLE BASE(SUP)
(GUIDE ROLLER)
POLE BASE(TU)
(GUIDE ROLLER)
TU GUIDE
POLE
TENSION
POLE
PINCH
ROLLER

Fig. 2-5-4 Tape transport system

2.5.4 A/CTL head height & azimuth

1. Connect the patch cord (YTU93082A) to CN207 on the PROCESS board.
2. Connect the channel-1 scope probe to the audio output and connect the channel-2 scope probe to CN1 pin 8 on the patch cord.
3. Set the tracking to its center range by pressing the (+) and (–) tracking controls simultaneously.
4. Adjust screws Ⓐ, Ⓑ and Ⓒ approximately 45 degrees in the same direction to obtain maximum audio output and CTL signal levels.
5. As a final fine adjustment, adjust screw Ⓑ for minimum signal level fluctuation and screw Ⓒ for maximum output signal level.

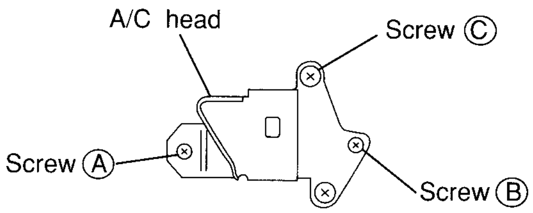

A/C head
Screw Ⓒ
Screw Ⓐ
Screw Ⓑ

Fig. 2-5-5 A/C head

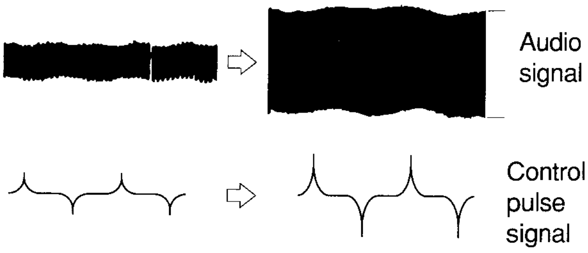

Audio
signal
Control
pulse
signal

Fig. 2-5-6 Audio and CTL signal

2.5.5 Phase of control head (X value)

1. Connect the patch cord (YTU93082A) to CN207 on the PROCESS board.
2. Play back the SP stairstep signal of the alignment tape and observe signal at pin 3 of CN1 (V.TP FM) with external trigger from pin 6 of CN1 (V.FF) on the patch cord.
3. Operate the tracking button in the center and manual tracking mode by pressing the tracking (+) and (–) buttons and confirm that the FM output level is maximum at the center position as shown in Fig. 2-5-8.
4. If necessary, slightly loosen the setscrews Ⓓ and Ⓔ and insert the Tweezers into the notch and guide hole to move the A/C head fully in the direction of the capstan to the extent.
5. Gradually move the A/C head toward the drum to find the position where the FM output level maximum for the first time (a' – b' in Fig. 2-5-8).
6. Fine adjust the phase of the A/C head and tighten the screwsⒹ and Ⓔ at the point a.

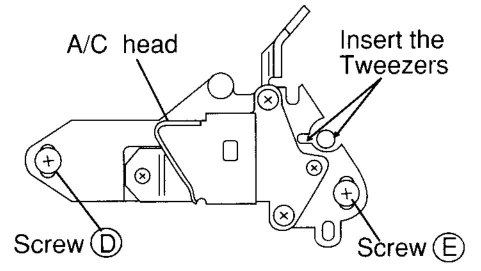


Fig. 2-5-7 Phase of control head

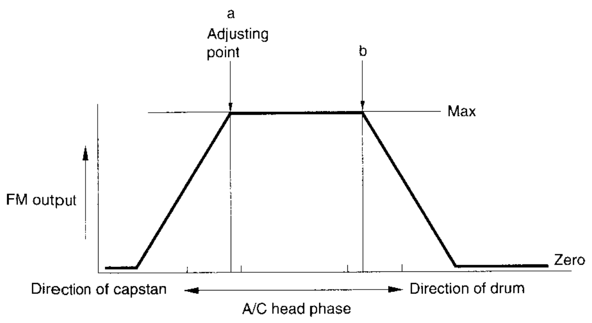


Fig. 2-5-8 Phase adjustment point of control head

2.6 REMARKS

2.6.1 Cleaning

1. For cleaning of the upper drum (particularly video heads), use fine-woven cotton cloth or Kimwipe with alcohol soaks through. Do not move the cloth but turn the upper drum counterclockwise.

   Note: ***Make sure not to move the cloth in the vertical direction to the video head, since it may cause damage of the video heads.***

2. For cleaning of parts of the tape transport system except the upper drum, use fine-woven cotton cloth or cotton swab soaked alcohol.
3. After cleaning, confirm that the cleaned parts are completely dry before loading the deck with cassette tape.

2.6.2 Applying oil and grease

1. Periodical oiling and greasing are not required but should be done to new parts when replacing. If oil and grease on the other parts of the other party are old and dirty, wipe them clean and apply new oil or grease.
2. For parts and points to apply oil and grease, refer to the exploded view of the mechanism assembly (M3). Table 2-6-1 specifies oil and grease to be used.
3. When oiling, clean the objective parts with alcohol first and apply one or two drop(s) of oil. Too much oiling causes rotary parts to slip because of oil leakage.

Classification	Name	Part No.	Symbol in drawing
Grease	Grease	KYODO-SH-P	AA
Oil	Cosmo Hydro HV100	YTU94027	BB

Table 2-6-1 Specific oil and grease to be used

2.6.3 Checkup

After replacement of the supply reel disk and tension band, make sure to inspect back tension according to the adjustment procedure of MECHANISM ADJUSTMENT section.

2.7 PATCH CORD (YTU93082A) CONNECTION

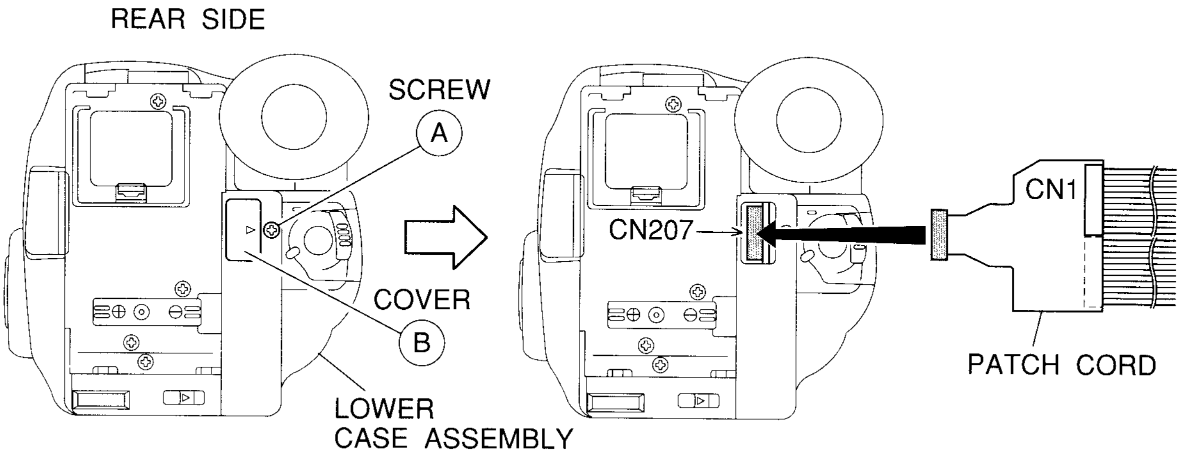

REAR SIDE
SCREW
A
COVER
B
LOWER
CASE ASSEMBLY
CN207
CN1
PATCH CORD

Fig. 2-7-1 PATCH CORD CONNECTION

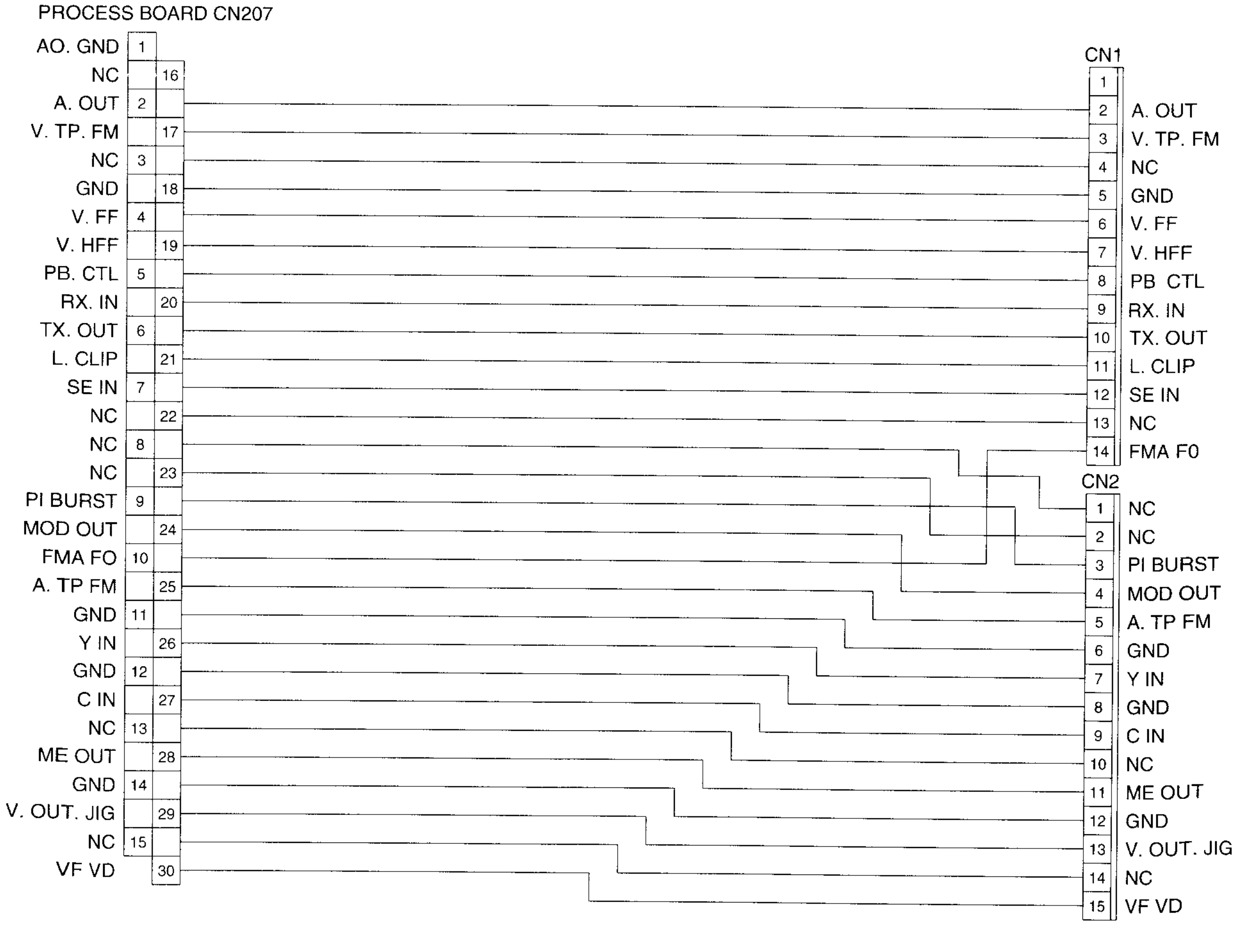

PROCESS BOARD CN207
AO. GND 1
NC 16
A. OUT 2
V. TP. FM 17
NC 3
GND 18
V. FF 4
V. HFF 19
PB. CTL 5
RX. IN 20
TX. OUT 6
L. CLIP 21
SE IN 7
NC 22
NC 8
NC 23
PI BURST 9
MOD OUT 24
FMA FO 10
A. TP FM 25
GND 11
Y IN 26
GND 12
C IN 27
NC 13
ME OUT 28
GND 14
V. OUT. JIG 29
NC 15
VF VD 30
CN1
1
2 A. OUT
3 V. TP. FM
4 NC
5 GND
6 V. FF
7 V. HFF
8 PB CTL
9 RX. IN
10 TX. OUT
11 L. CLIP
12 SE IN
13 NC
14 FMA F0
CN2
1 NC
2 NC
3 PI BURST
4 MOD OUT
5 A. TP FM
6 GND
7 Y IN
8 GND
9 C IN
10 NC
11 ME OUT
12 GND
13 V. OUT. JIG
14 NC
15 VF VD

Fig. 2-7-2 PATCH CORD SCHEMATIC DIAGRAM

SECTION 3
ELECTRICAL ADJUSTMENT

3.1 ELECTRICAL ADJUSTMENT

3.1.1 PREPARATION

1. Precaution

This model does not contain adjustment controls (VR). General deck system and camera system adjustment are not required. However, if MAIN board need replacement, please use original E^{2}PROM on to new board. Then adjustment are not required. And if parts such as the following need replacement, special computerized adjustment are required (Refer to sec. 3.1.1-5). Please contact to JVC service for detaile information.

- OP block
- E^{2}PROM (IC104 of PROCESS board)

In the event of malfunction with electrical circuits, troubleshooting with the aid of proper test instruments most be done first, and then commence necessary repair, replacement and adjustment, etc.

1. In case of wiring to chip test points for measurement, use IC clips, etc. to avoid any stress.
2. Since connectors are fragile, carefully handle them in disconnecting and connecting.
3. Shortcircuit between operation un it and DECK chassis.

2. Required test equipment

1. Colour TV monitor.
2. AC power adapter (AA-V11 and AA-V6 or equivalent).
3. Oscilloscope (dual-trace type, for more than 20 MHz).
4. Digital voltmeter
5. Personal computer

3. Required adjustment tools

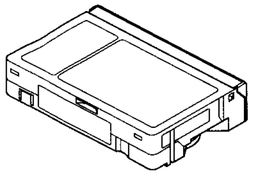
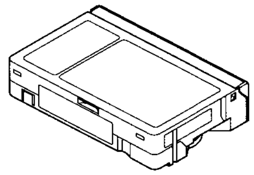
Alignment tape for SP Interchangeability (MHPE-C)	Alignment tape for N. SP PB Y/C level (MHVE-2C)
	

Table 3-1-1 Required adjustment tools

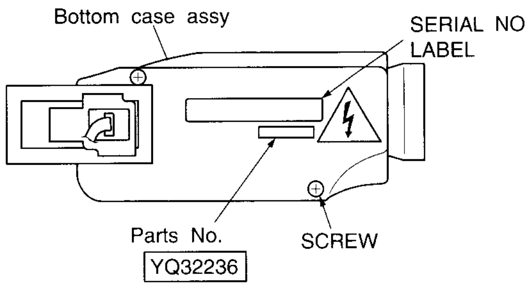
4. Setup for E. VF section adjustment

1. Referring to "SEC. 1 DISASSEMBLY" and connect the E. VF connector CN1 of the E. VF board to CN206 of the PROCESS board of deck section.

Note:

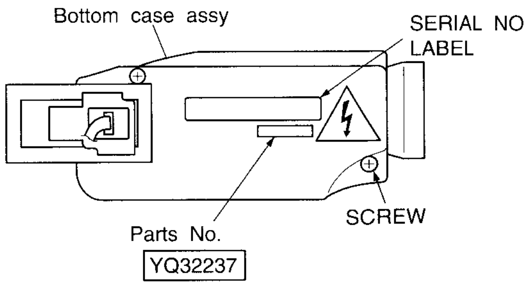
- *There are two types of E. VFs for this model.*
- *The adjustment procedure of them are different. For performing the adjustment, please follow the item mentioned on the figure below.*

<TYPE M> (YQ32236)



Adjustment Item : 3.2

<TYPE T> (YQ32237)



Adjustment Item : 3.3

5. Required adjustment tools for Service support system

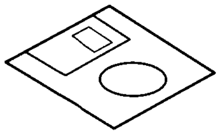
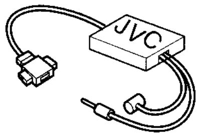
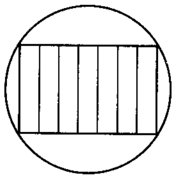
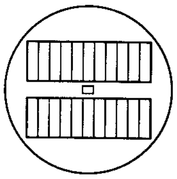
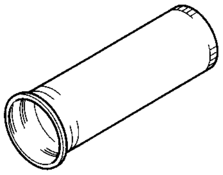
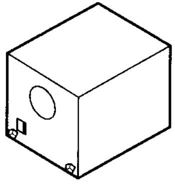
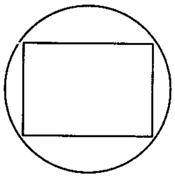
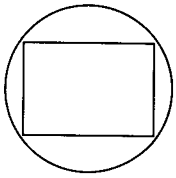
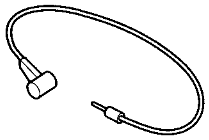
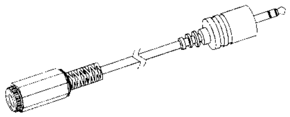
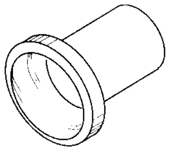
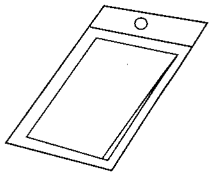
service suport system software YTU94057-24	Interface cable YTU93063	Color bar chart YTU92001-051	Gray scale chart YTU92001-052
			
Infinity adjustment lens YTU92001B	Light box YTU93072A-1	White balance chart YTU92001-053	Skintone chart YTU92001-054
			
Adapter cable YTU94066	JLIP conversion cable YTU94084A	1 m focus chart YTU92001-016	Cleaning cloth KSMM-01
			

Table 3-1-2 Required adjustment tools for Service support system

6. Connections for Service support system

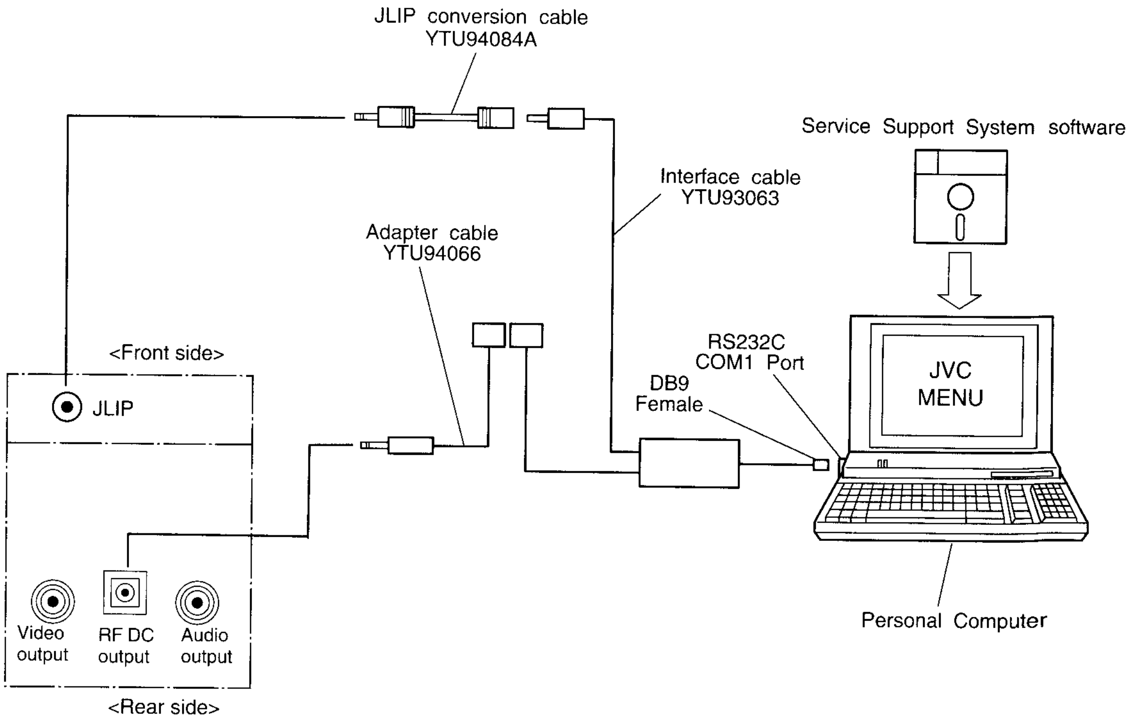

JLIP conversion cable
YTU94084A
Service Support System software
Interface cable
YTU93063
Adapter cable
YTU94066
<Front side>
JLIP
RS232C
COM1 Port
DB9
Female
JVC
MENU
Video output
RF DC output
Audio output
<Rear side>
Personal Computer

Fig. 3-1-1 Connection for Service support system

■ CIRCUIT PROTECTOR LOCATION FOR REAR, AV/MS and PROCESS BOARDS

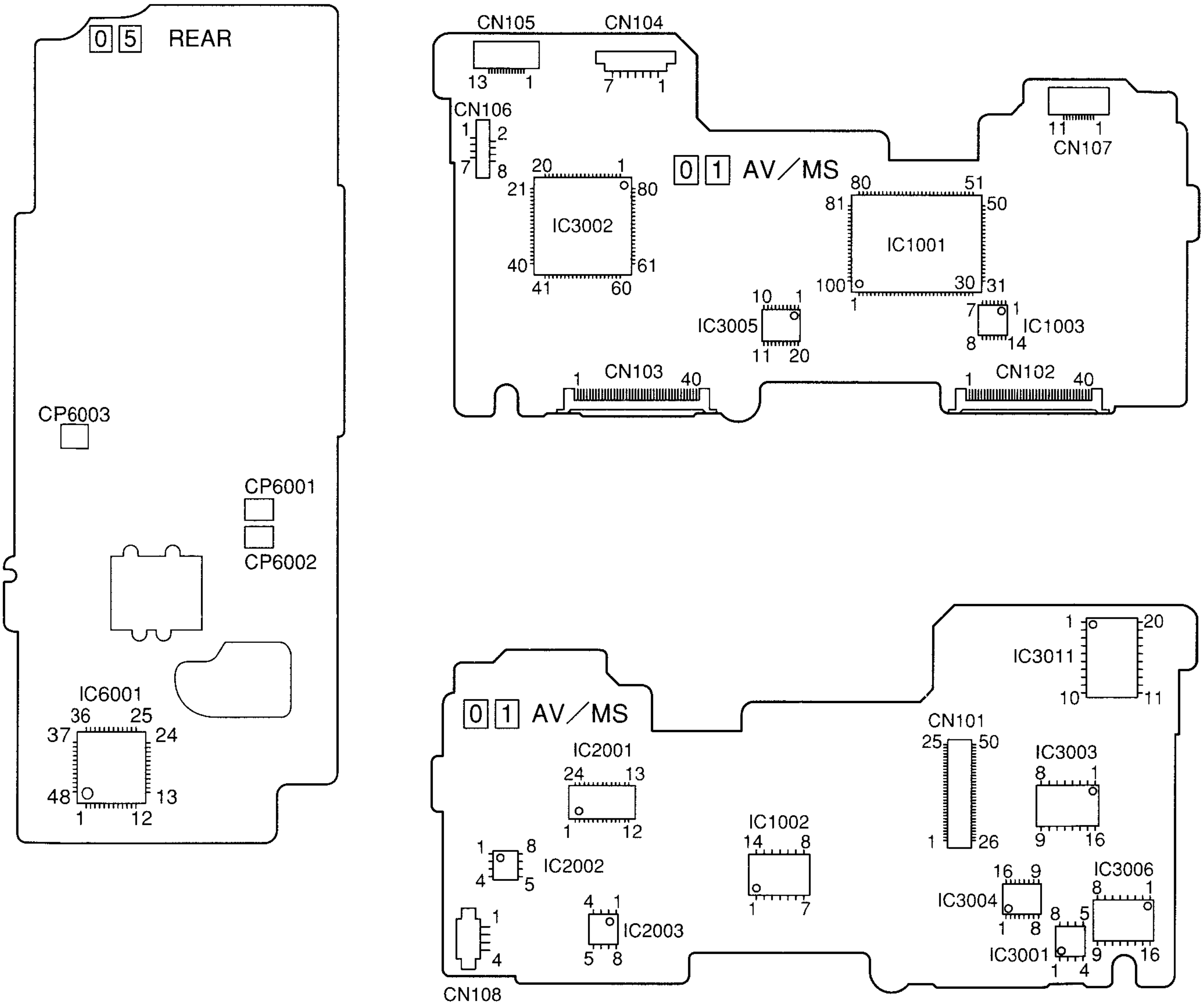

05 REAR
CP6003
CP6001
CP6002
IC6001
36 25
37 24
48 13
1 12
CN105
CN104
13 1
7 1
CN106
1 2
7 8
01 AV/MS
IC3002
20 1
21 80
40 61
41 60
IC1001
80 51
81 50
100 31
1 30
IC3005
10 1
11 20
IC1003
7 1
8 14
CN107
11 1
CN103
1 40
CN102
1 40
01 AV/MS
IC3011
1 20
10 11
CN101
25 50
1 26
IC3003
8 1
9 16
IC2001
24 13
1 12
IC1002
14 8
1 7
IC2002
1 8
4 5
IC2003
4 1
5 8
IC3004
16 9
1 8
IC3006
8 1
9 16
IC3001
8 5
1 4
CN108
1
4

Fig. 3-1-2 Circuit protector, IC and connector location for REAR and AV/MS board assembly

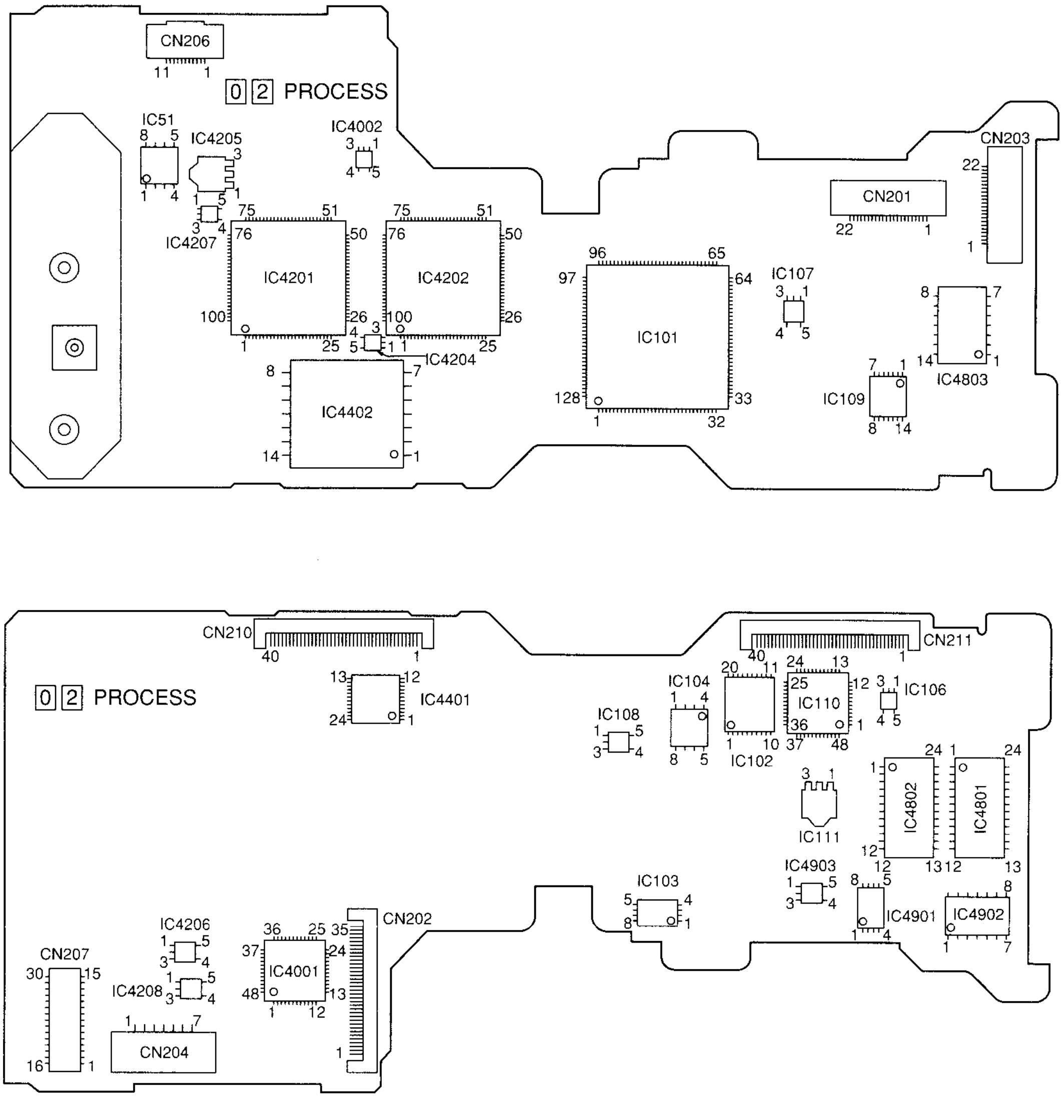

CN206
0 2 PROCESS
IC51
IC4205
IC4002
IC4207
IC4201
IC4202
IC4204
IC4402
IC101
IC107
CN201
CN203
IC4803
IC109
CN210
CN211
IC4401
IC104
IC110
IC106
IC108
IC102
IC4802
IC4801
IC111
IC103
IC4903
IC4901
IC4902
CN202
IC4206
IC4208
IC4001
CN207
CN204

Fig. 3-1-3 IC and connector location for PROCESS board assembly

3.2 ELECTRONIC VIEWFINDER (E. VF) ADJUSTMENT <TYPE M>

Notes: *Unless otherwise specified, all measurement points and adjustment parts are located on E. VF board.*

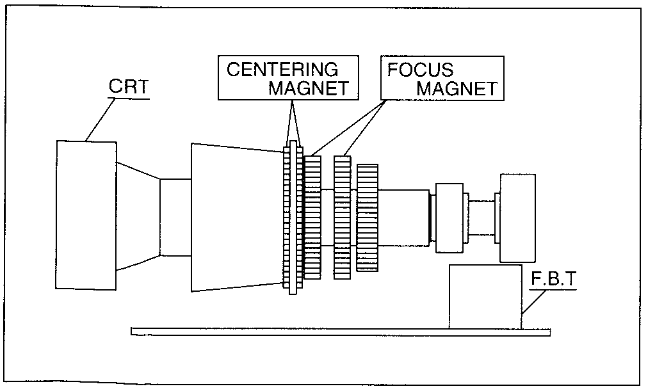

CRT
CENTERING MAGNET
FOCUS MAGNET
F.B.T

Fig. 3-2-1 E. VF

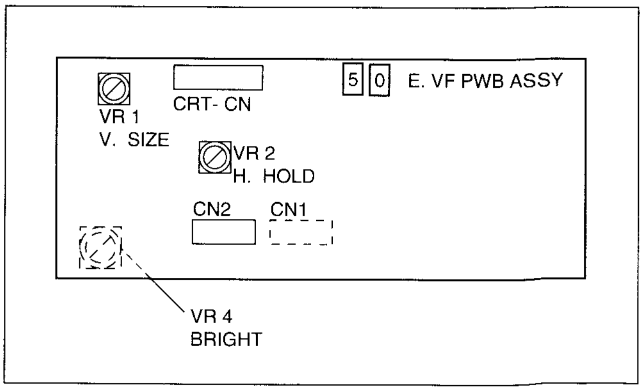

VR 1
V. SIZE
CRT- CN
5 0 E. VF PWB ASSY
VR 2
H. HOLD
CN2
CN1
VR 4
BRIGHT

Fig. 3-2-2 E. VF board

3.2.1 Horizontal sync.

Subject	• Alignment tape [MHPE-C] • Stairstep
Mode	• PB
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• VR2 (H. HOLD)
Specification	• The midpoint of the two markings

1) Observing the viewfinder screen, turn VR2 fully clockwise to make the picture unstable.
2) Slowly return VR2 counterclockwise to find a point where the picture becomes stable, and mark this position.
3) Turn VR2 fully counterclockwise to make the picture unstable in the same manner as 1) above.
4) Slowly return VR2 clockwise until the picture becomes stable, and mark this position.
5) Finally set VR2 to the midpoint between the two markings of 2) and 4).

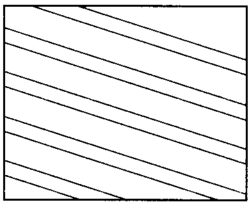

(a)

Fig. 3-2-3 Horizontal sync. 1

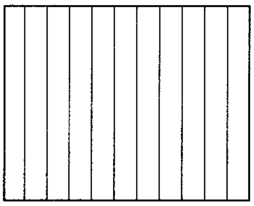

(b)

Fig. 3-2-4 Horizontal sync. 2

3.2.2 PLL adjustment

Subject	• Camera picture
Mode	• EE
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• VR1 (V. SIZE)
Specification	• Normal picture amplitude

1) Observing the viewfinder screen, adjust VR1 for normal picture amplitude.

3.2.3 Centering

Subject	• Alignment tape [MHPE-C] • Stairstep
Mode	• PB
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• Centering magnet (CRT assy)
Specification	• The center of the E. VF screen

1) While observing the viewfinder screen, adjust the centering magnet to locate the stairstep in the center of the viewfinder screen.

3.2.4 Focus

Subject	• Camera picture
Mode	• EE
Equipment	• E. VF
Measurment point	• E. VF screen
Adjustment part	• Focus magnet (CRT assy)
Specification	• The center area is clear and defined

1) While observing the viewfinder screen, adjust the focus magnet for the deflecting yoke so that the picture at the central area of the screen is clear and defined.

3.2.5 Brightness

Subject	• -
Mode	• EE • Lens closed
Equipment	• E. VF
Measurment point	• E. VF screen
Adjustment part	• VR4 (BRIGHT)
Specification	• The CRT raster is just barely visible

1) Close the lens with the cap and adjust VR4 so that the raster of the CRT is just visible in the E. VF.

3.3 ELECTRONIC VIEWFINDER (E. VF) ADJUSTMENT <TYPE T>

Notes:

- *Unless otherwise specified, all measurement points and adjustment parts are located on E. VF board.*
- *After adjustment or replacement of the deflection yoke or the centering magnet, fix it by the band as shown the figure below.*

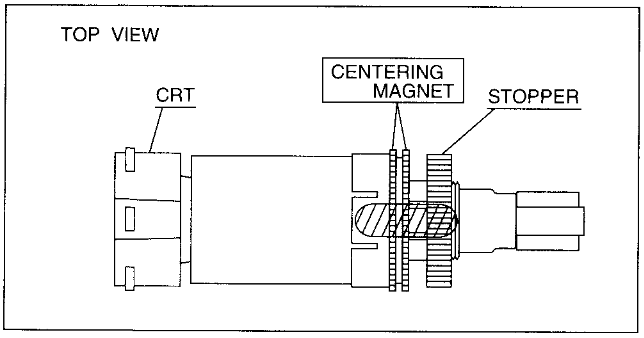


Fig. 3-3-1 E. VF

- *After adjustment is completed, compare the picture on the E. VF screen with the monitor TV.*

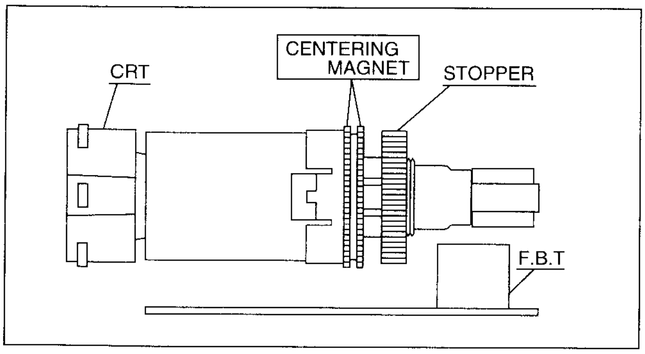


Fig. 3-3-2 E. VF

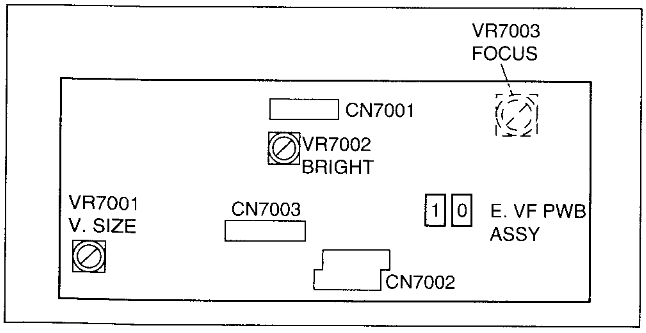


Fig. 3-3-3 E. VF board

3.3.1 Tilt

Subject	• Alignment tape [MHPE-C] • Stairstep
Mode	• PB
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• Deflection yoke
Specification	• The picture is visible as same as monitor TV.

1) Put the deflection yoke to the most inner side of CRT neck first. Then fix the stopper temporary.
2) Adjust the tilt of picture on the E. VF screen by tilting the deflection yoke.
3) Fix the stopper completely.

3.3.2 Centering

Subject	• Alignment tape [MHPE-C] • Stairstep
Mode	• PB
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• Centering magnet (CRT assy)
Specification	• The centre of the E. VF screen

1) While observing the viewfinder screen, adjust the centering magnet to locate the stairstep in the centre of the viewfinder screen.

3.3.3 Vertical scanning

Subject	• Camera picture
Mode	• EE
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• VR7001 (V. SIZE)
Specification	• Normal picture amplitude

1) Observing the viewfinder screen, adjust VR7001 for normal picture amplitude.

3.3.4 Brightness

Subject	• –
Mode	• EE • Lens closed
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• VR7002 (BRIGHT)
Specification	• The CRT raster is just barely visible

1) Close the lens with the cap and adjust VR7002 so that the raster of the CRT is just visible in the E. VF.

3.3.5 Focus

Subject	• Camera picture
Mode	• EE
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• VR7003 (FOCUS)
Specification	• The centre area is clear and defined

1) While observing the viewfinder screen, adjust VR7003 so that the picture at the central area of the screen is clear and defined.

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

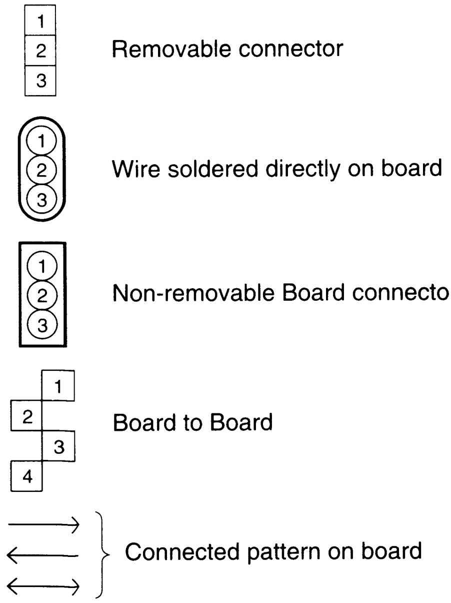
Unless otherwise specified.

1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in µF, (P: PF).
3) All inductance values are in µH, (m: mH).
4) All diodes are 1SS133, MA165 or IN4148M (refer to parts list).

2. Indications of control voltage

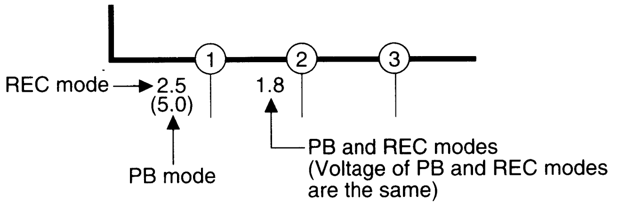
AUX : Active only at high
$\overline{\text{AUX}}$ or AUX(L) : Active at low

3. Interpreting Connector indications


1
2
3
Removable connector
①
②
③
Wire soldered directly on board
①
②
③
Non-removable Board connector
1
2
3
4
Board to Board
Connected pattern on board

4. Voltage measurement

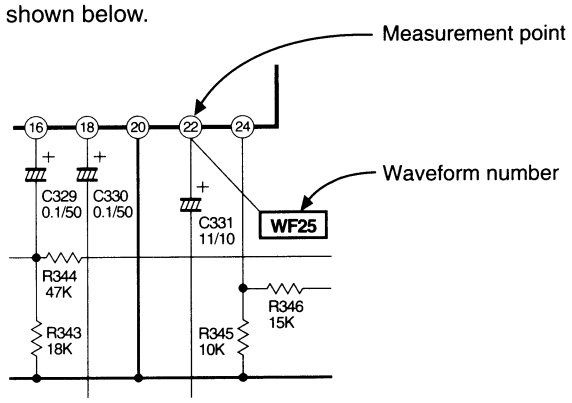
1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
   — : Unmeasurable or unnecessary to measure
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode
4) Indication on schematic diagram
   Voltage Indications for REC and PB mode on the schematic diagram are as shown below.


①
②
③
REC mode
2.5
(5.0)
1.8
PB mode
PB and REC modes
(Voltage of PB and REC modes are the same)

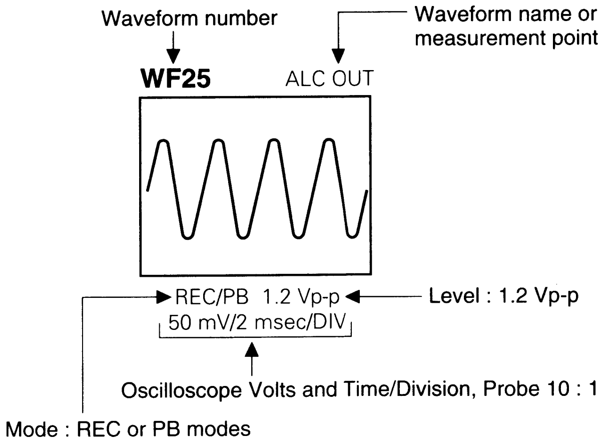
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test chatrs in the E-E mode
4) Indication on schematic diagram
   Waveform indications on the schematic diagram are as shown below.

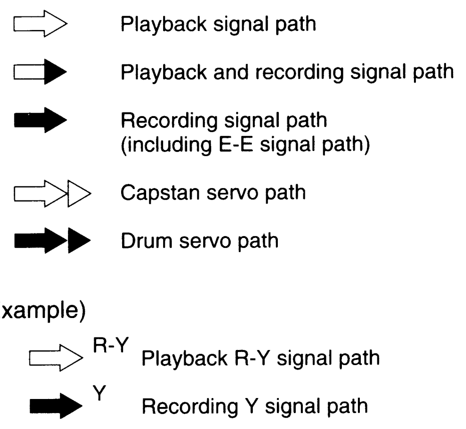

Measurement point
16
18
20
22
24
Waveform number
C329
0.1/50
C330
0.1/50
C331
11/10
WF25
R344
47K
R343
18K
R345
10K
R346
15K

5) Waveform indications


Waveform number
Waveform name or measurement point
WF25
ALC OUT
REC/PB 1.2 Vp-p
50 mV/2 msec/DIV
Level : 1.2 Vp-p
Oscilloscope Volts and Time/Division, Probe 10 : 1
Mode : REC or PB modes

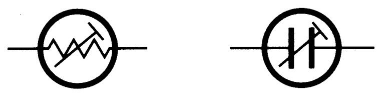
6. Signal path Symbols

The arrows indicate the signal path as follows.


Playback signal path
Playback and recording signal path
Recording signal path
(including E-E signal path)
Capstan servo path
Drum servo path
(Example)
R-Y
Playback R-Y signal path
Y
Recording Y signal path

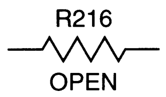
7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.



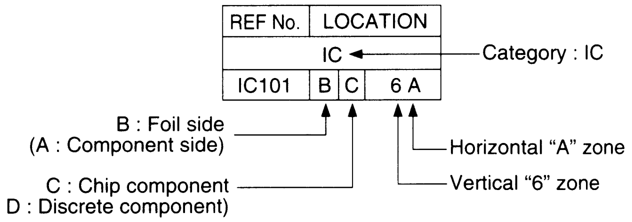
CIRCUIT BOARD NOTES

1. Foil and Component sides

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) indicated.

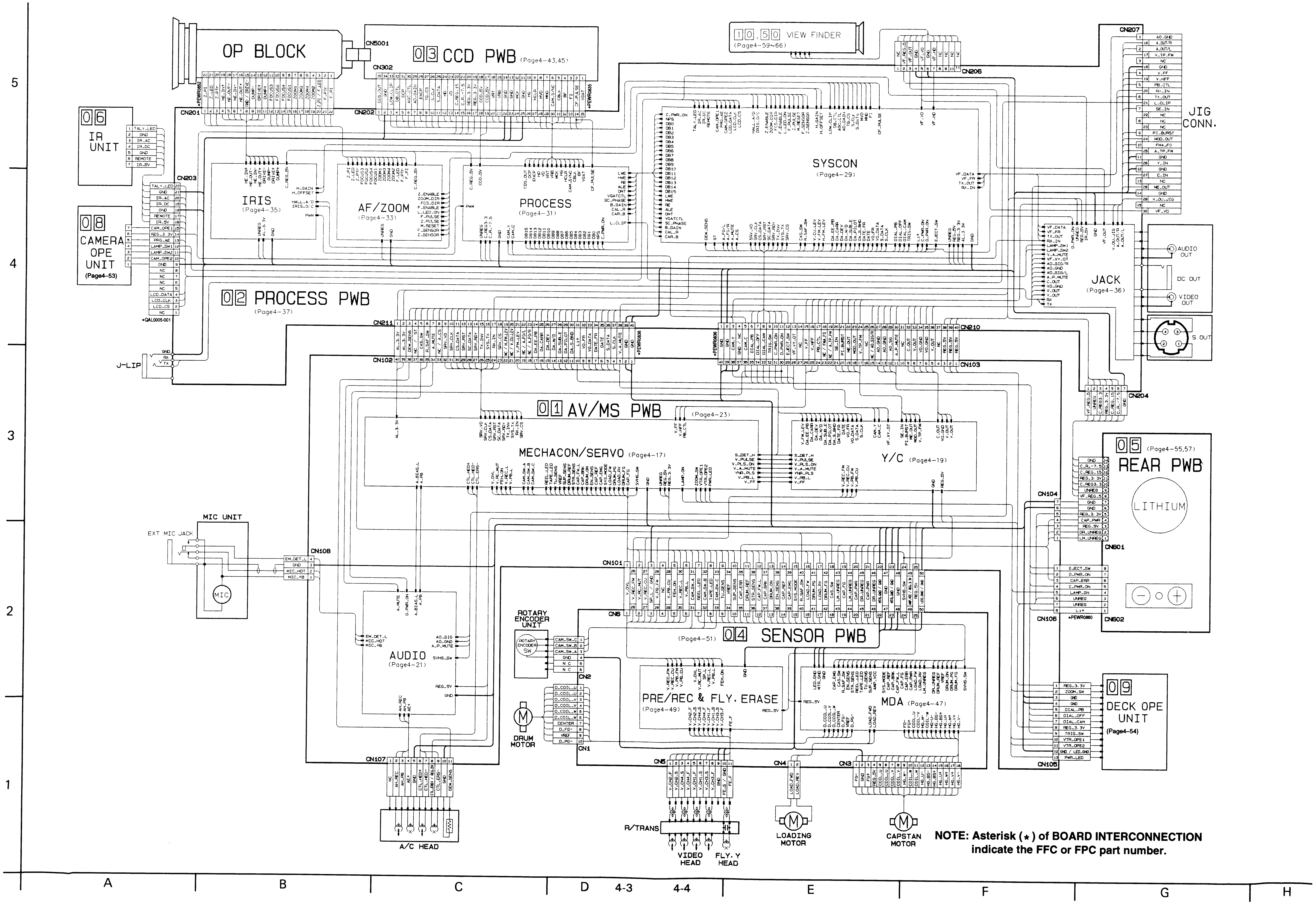
2. Parts location guides

Parts location are indicated by guide scale on the circuit board.


REF No.
LOCATION
IC
Category : IC
IC101
B
C
6 A
B : Foil side
(A : Component side)
C : Chip component
D : Discrete component)
Horizontal "A" zone
Vertical "6" zone

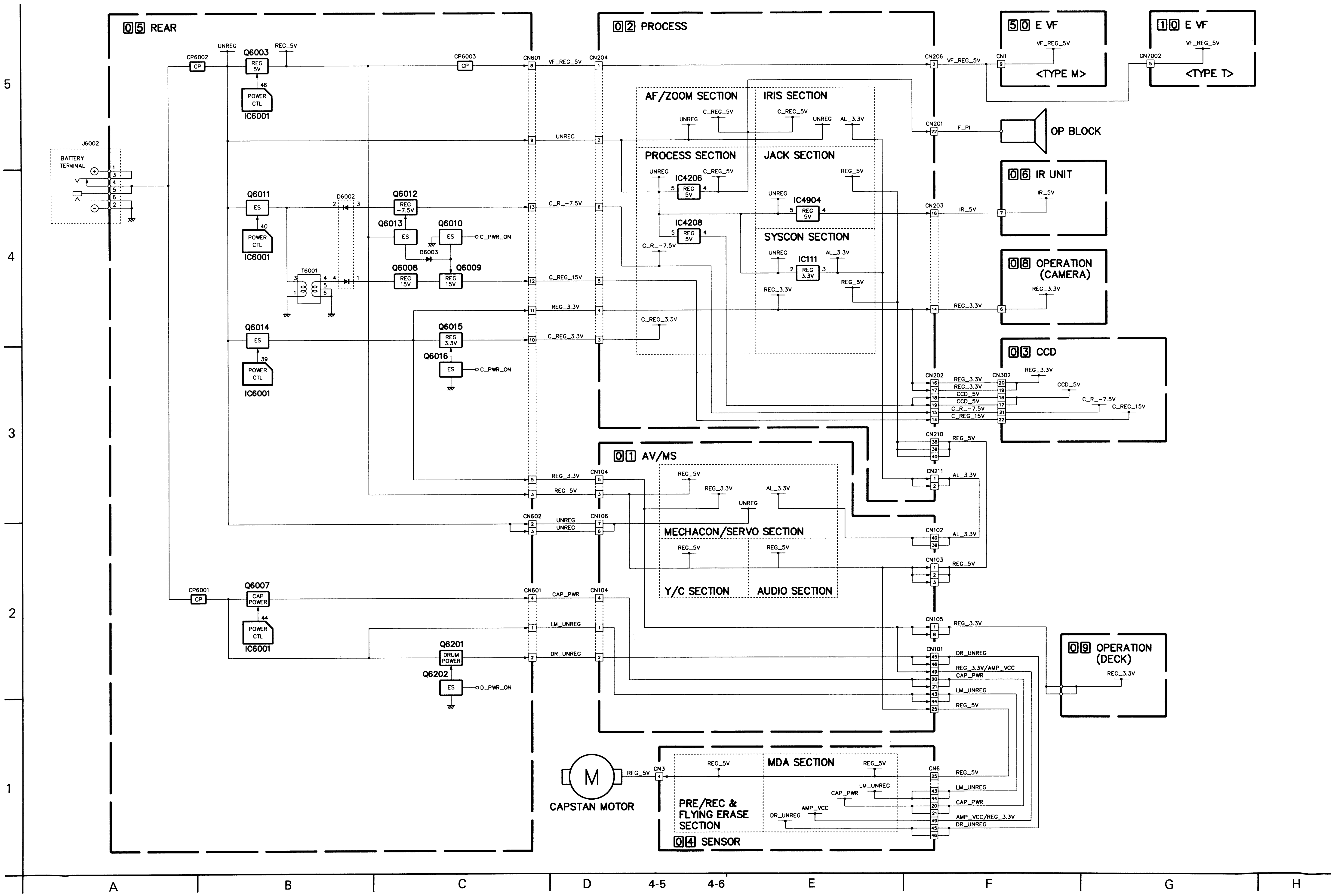
Note:
For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

4.1 BOARD INTERCONNECTIONS

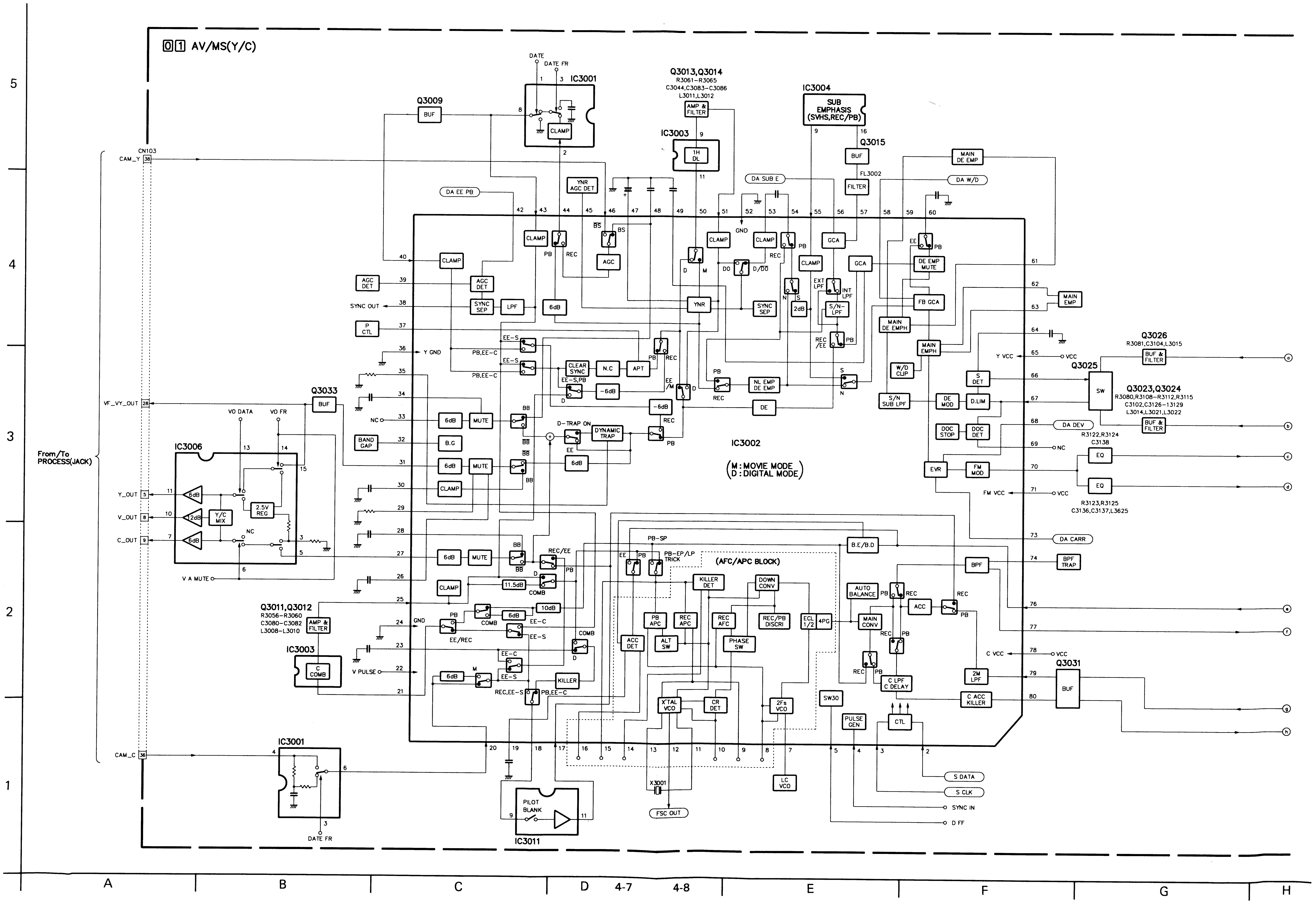

OP BLOCK
03 CCD PWB (Page4-43,45)
CN5001
CN302
CN201
CN202
10,50 VIEW FINDER (Page4-59~66)
CN206
CN207
JIG CONN.
06 IR UNIT
CN203
08 CAMERA OPE UNIT (Page4-53)
IRIS (Page4-35)
AF/ZOOM (Page4-33)
PROCESS (Page4-31)
SYSCON (Page4-29)
JACK (Page4-36)
AUDIO OUT
DC OUT
VIDEO OUT
S OUT
02 PROCESS PWB (Page4-37)
CN211
CN102
CN210
CN103
CN204
J-LIP
01 AV/MS PWB (Page4-23)
MECHACON/SERVO (Page4-17)
Y/C (Page4-19)
05 (Page4-55,57) REAR PWB
LITHIUM
CN104
CN601
CN602
CN106
MIC UNIT
EXT MIC JACK
MIC
CN108
CN101
AUDIO (Page4-21)
ROTARY ENCODER UNIT
CN6
04 SENSOR PWB (Page4-51)
CN2
CN1
DRUM MOTOR
PRE/REC & FLY. ERASE (Page4-49)
MDA (Page4-47)
09 DECK OPE UNIT (Page4-54)
CN105
CN107
CN5
CN4
CN3
A/C HEAD
R/TRANS
VIDEO HEAD
FLY. Y HEAD
LOADING MOTOR
CAPSTAN MOTOR
5
4
3
2
1
A
B
C
D
E
F
G
H

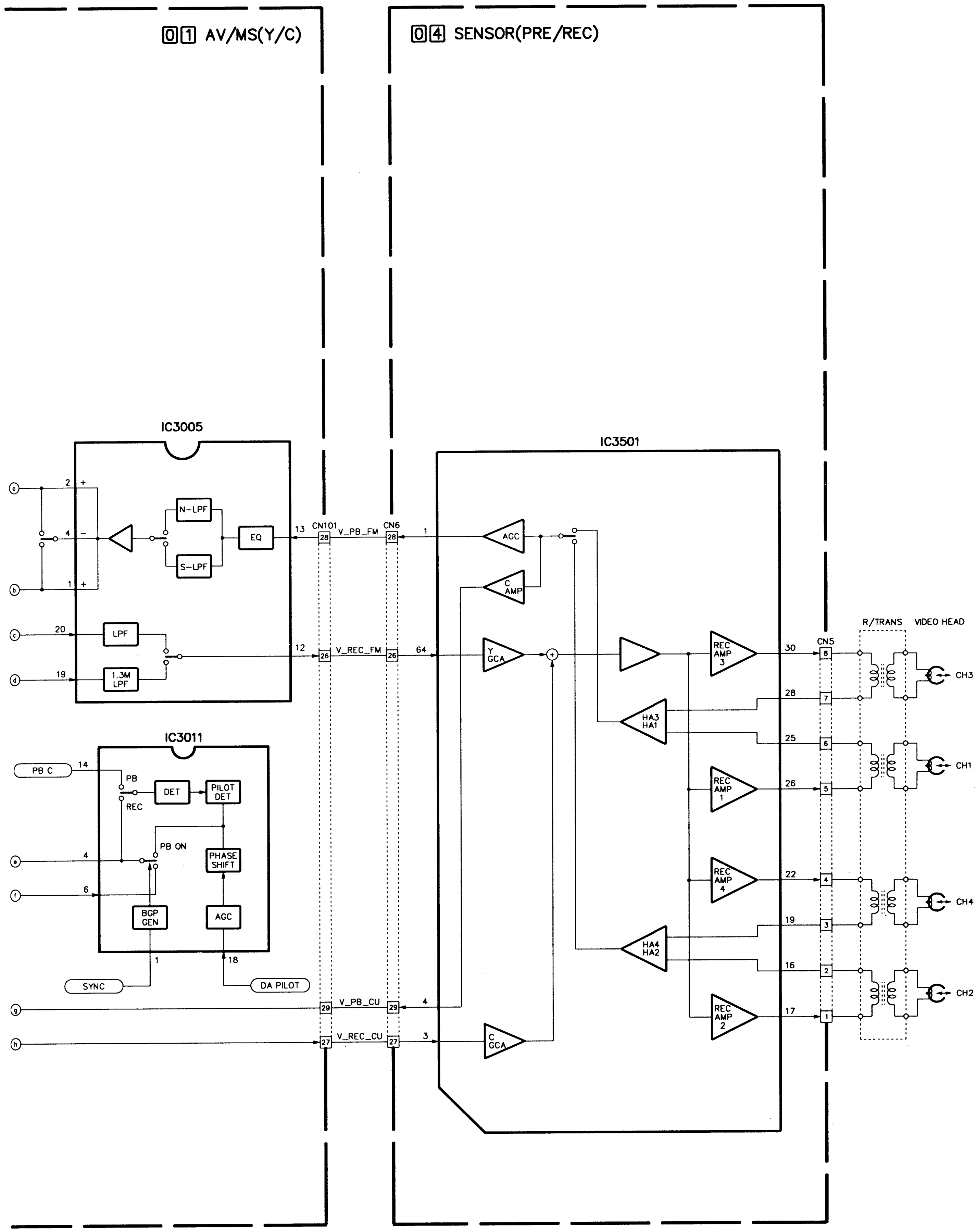
NOTE: Asterisk (*) of BOARD INTERCONNECTION indicate the FFC or FPC part number.

4.2 POWER SYSTEM BLOCK DIAGRAM


05 REAR
02 PROCESS
50 E VF
<TYPE M>
10 E VF
<TYPE T>
OP BLOCK
06 IR UNIT
08 OPERATION (CAMERA)
03 CCD
01 AV/MS
09 OPERATION (DECK)
04 SENSOR
CAPSTAN MOTOR
J6002
BATTERY TERMINAL
CP6002
CP6003
CP6001
UNREG
REG_5V
Q6003
REG 5V
POWER CTL
IC6001
Q6011
ES
D6002
Q6012
REG -7.5V
Q6013
Q6010
C_PWR_ON
D6003
T6001
Q6008
REG 15V
Q6009
Q6014
Q6015
REG 3.3V
Q6016
Q6007
CAP POWER
Q6201
DRUM POWER
Q6202
D_PWR_ON
CN601
CN602
CN204
CN104
CN106
VF_REG_5V
C_R_-7.5V
C_REG_15V
REG_3.3V
C_REG_3.3V
CAP_PWR
LM_UNREG
DR_UNREG
AF/ZOOM SECTION
IRIS SECTION
C_REG_5V
AL_3.3V
PROCESS SECTION
JACK SECTION
IC4206
IC4904
IC4208
SYSCON SECTION
IC111
CN206
CN201
F_PI
CN203
IR_5V
CN1
CN7002
CN202
CN302
CCD_5V
CN210
CN211
CN102
CN103
CN105
CN101
REG_3.3V/AMP_VCC
MECHACON/SERVO SECTION
Y/C SECTION
AUDIO SECTION
CN3
CN6
MDA SECTION
PRE/REC & FLYING ERASE SECTION
AMP_VCC
AMP_VCC/REG_3.3V
M
A
B
C
D
E
F
G
H
1
2
3
4
5

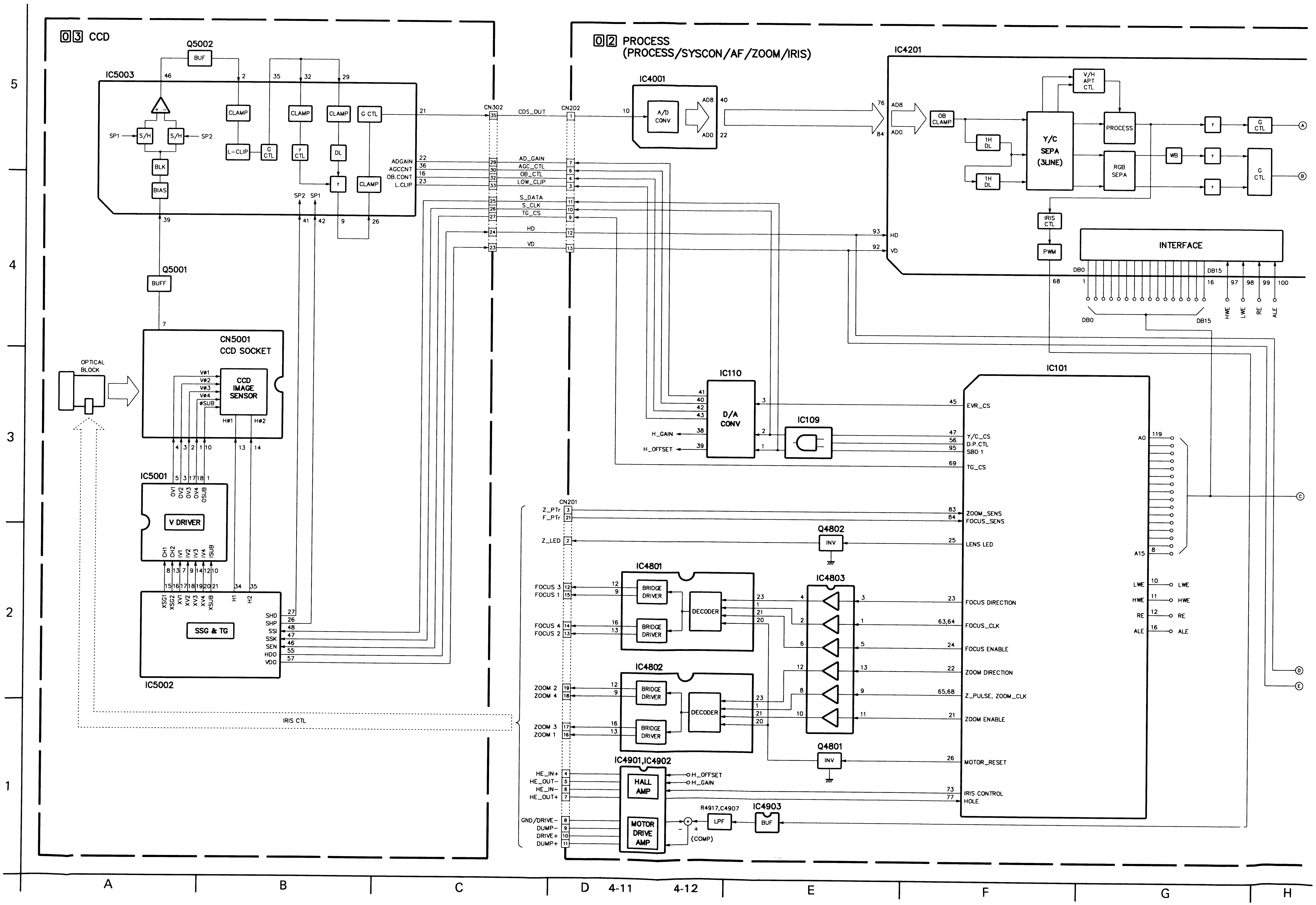
4.3 Y/C BLOCK DIAGRAM


01 AV/MS(Y/C)
From/To PROCESS(JACK)
CN103
CAM_Y
VF_VY_OUT
Y_OUT
V_OUT
C_OUT
CAM_C
V A MUTE
IC3001
DATE
DATE FR
CLAMP
Q3009
BUF
Q3013,Q3014
R3061–R3065
C3044,C3083–C3086
L3011,L3012
AMP & FILTER
IC3003
1H DL
IC3004
SUB EMPHASIS (SVHS,REC/PB)
Q3015
BUF
FL3002
FILTER
MAIN DE EMP
DA SUB E
DA W/D
DA EE PB
YNR AGC DET
Q3033
BUF
IC3006
6dB
2dB
Y/C MIX
2.5V REG
VO DATA
VO FR
AGC DET
SYNC OUT
SYNC SEP
LPF
P CTL
Y GND
NC
BAND GAP
B.C
MUTE
CLEAR SYNC
N.C
APT
-6dB
DYNAMIC TRAP
D-TRAP ON
AGC
YNR
SYNC SEP
GCA
FB GCA
MAIN DE EMPH
MAIN EMPH
DE EMP MUTE
S/N-LPF
NL EMP DE EMP
DE
W/D CLIP
S/N SUB LPF
DE MOD
D.LIM
S DET
DOC STOP
DOC DET
EVR
FM MOD
MAIN EMP
Y VCC
FM VCC
C VCC
IC3002
(M: MOVIE MODE D: DIGITAL MODE)
Q3026
R3081,C3104,L3015
BUF & FILTER
Q3025
SW
Q3023,Q3024
R3080,R3108–R3112,R3115
C3102,C3126–13129
L3014,L3021,L3022
DA DEV
R3122,R3124
C3138
EQ
R3123,R3125
C3136,C3137,L3625
DA CARR
BPF TRAP
Q3031
BUF
(AFC/APC BLOCK)
PB-SP
PB-EP/LP TRICK
KILLER DET
DOWN CONV
PB APC
REC APC
REC AFC
REC/PB DISCRI
ECL 1/2
4PG
ACC DET
ALT SW
PHASE SW
AUTO BALANCE
MAIN CONV
ACC
BPF
B.E/B.D
C LPF C DELAY
2M LPF
C ACC KILLER
X'TAL VCO
CR DET
2Fs VCO
LC VCO
SW30
PULSE GEN
CTL
X3001
FSC OUT
S DATA
S CLK
SYNC IN
D FF
Q3011,Q3012
R3056–R3060
C3080–C3082
L3008–L3010
AMP & FILTER
C COMB
V PULSE
11.5dB
10dB
COMB
KILLER
IC3011
PILOT BLANK
5
4
3
2
1
A
B
C
D
E
F
G
H

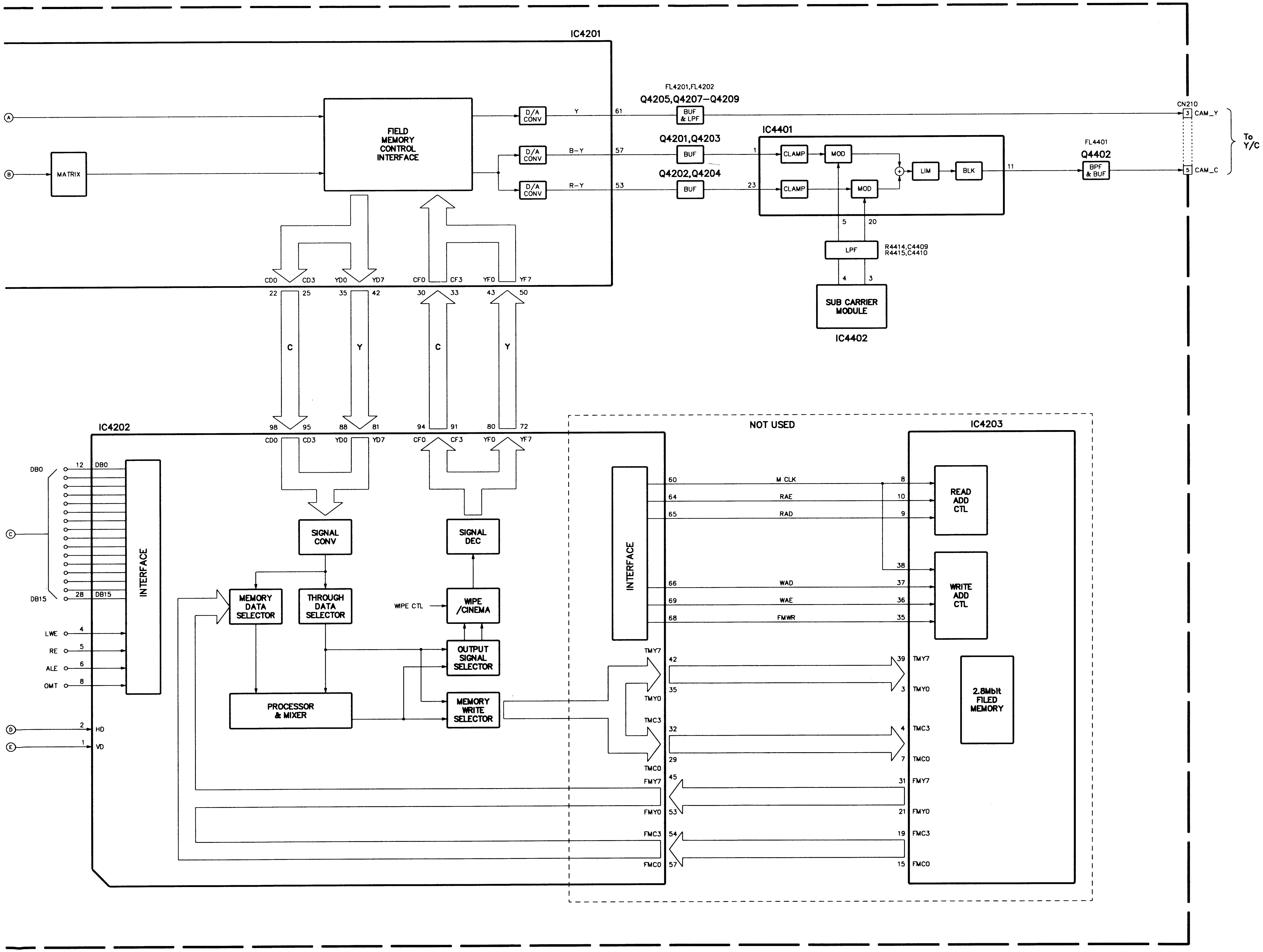


01 AV/MS(Y/C)
04 SENSOR(PRE/REC)
IC3005
N-LPF
S-LPF
EQ
LPF
1.3M LPF
IC3011
PB C
PB
REC
DET
PILOT DET
PB ON
PHASE SHIFT
BGP GEN
AGC
SYNC
DA PILOT
CN101
CN6
V_PB_FM
V_REC_FM
V_PB_CU
V_REC_CU
IC3501
AGC
C AMP
Y GCA
C GCA
HA3 HA1
HA4 HA2
REC AMP 3
REC AMP 1
REC AMP 4
REC AMP 2
CN5
R/TRANS
VIDEO HEAD
CH3
CH1
CH4
CH2

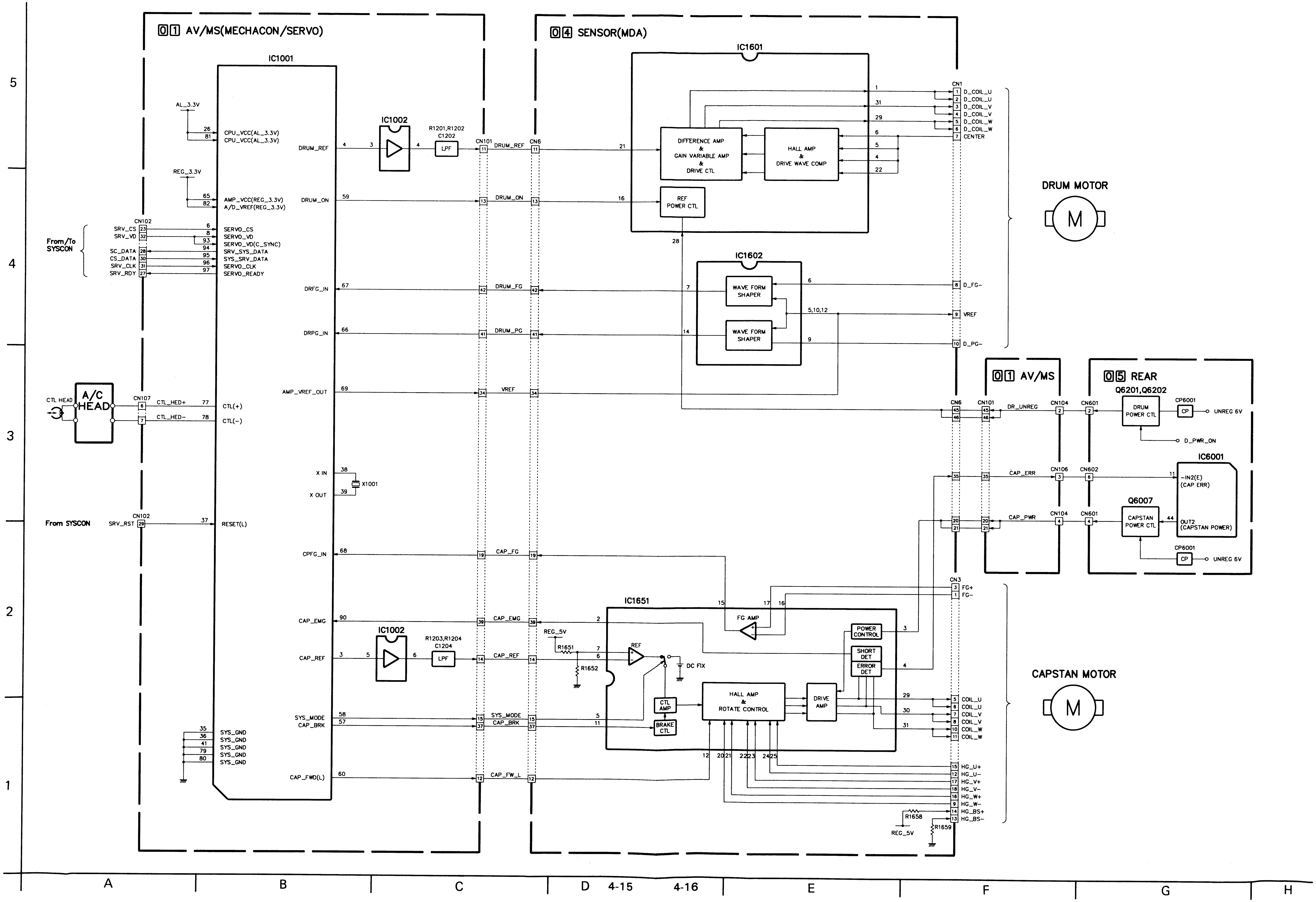
4.4 CAMERA BLOCK DIAGRAM



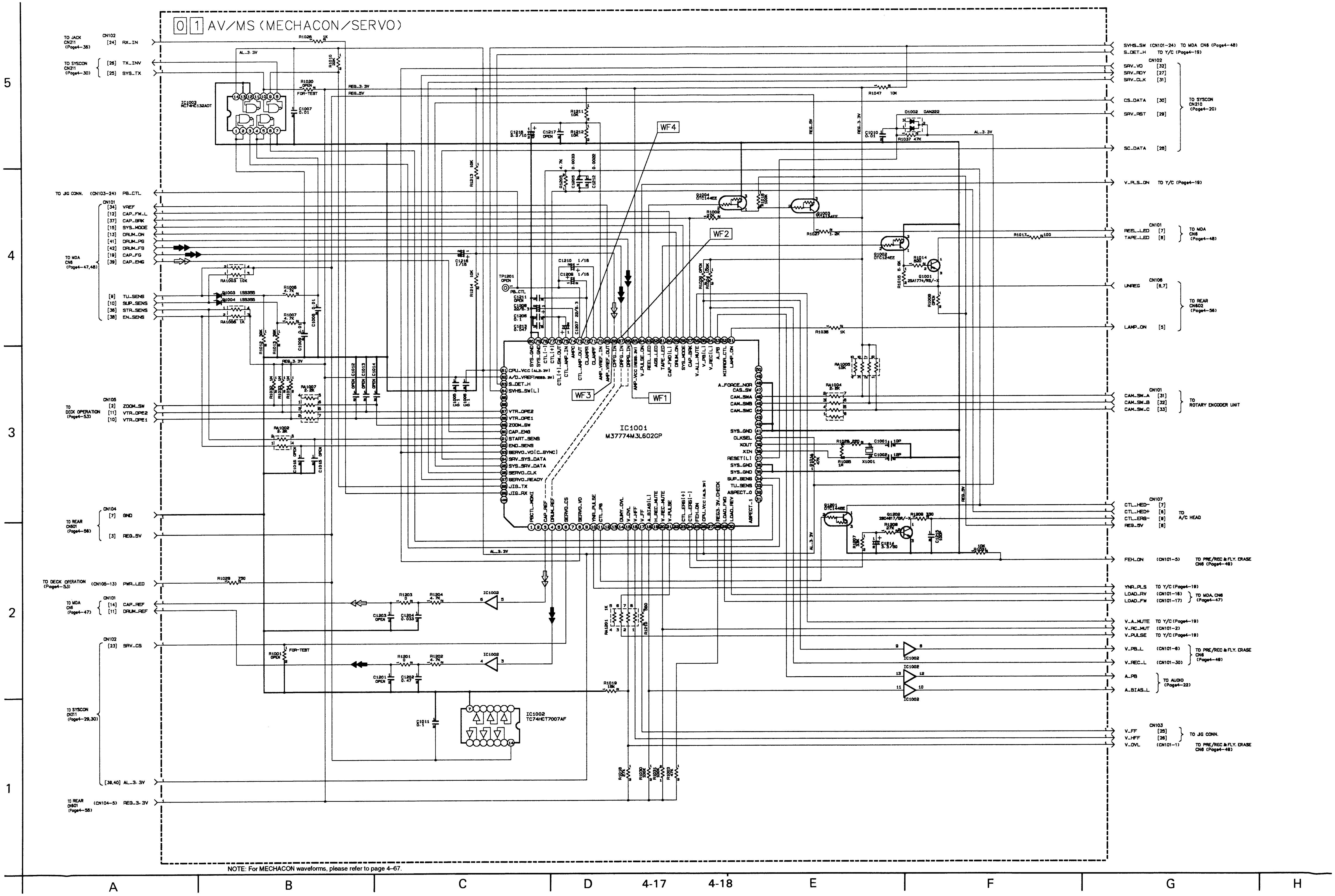
03 CCD
02 PROCESS (PROCESS/SYSCON/AF/ZOOM/IRIS)
IC5003
Q5002
BUF
S/H
SP1
SP2
BLK
BIAS
CLAMP
L-CLIP
G CTL
γ CTL
DL
γ
ADGAIN
AGCCNT
OB.CONT
L.CLIP
Q5001
BUFF
OPTICAL BLOCK
CN5001 CCD SOCKET
CCD IMAGE SENSOR
Vφ1
Vφ2
Vφ3
Vφ4
φSUB
Hφ1
Hφ2
IC5001
V DRIVER
OV1 OV2 OV3 OV4 OSUB
CH1 CH2 IV1 IV2 IV3 IV4 ISUB
IC5002
SSG & TG
XSG1 XSG2 XV1 XV2 XV3 XV4 XSUB H1 H2
SHD
SHP
SSI
SSK
SEN
HDO
VDO
IRIS CTL
CN302
CN202
CDS_OUT
AD_GAIN
AGC_CTL
OB_CTL
LOW_CLIP
S_DATA
S_CLK
TG_CS
HD
VD
IC4001
A/D CONV
AD8
AD0
IC4201
OB CLAMP
1H DL
Y/C SEPA (3LINE)
V/H APT CTL
PROCESS
RGB SEPA
WB
γ
G CTL
IRIS CTL
PWM
INTERFACE
DB0
DB15
HWE
LWE
RE
ALE
IC110
D/A CONV
H_GAIN
H_OFFSET
IC109
IC101
EVR_CS
Y/C_CS
D.P.CTL
SBO 1
TG_CS
ZOOM_SENS
FOCUS_SENS
LENS LED
FOCUS DIRECTION
FOCUS_CLK
FOCUS ENABLE
ZOOM DIRECTION
Z_PULSE, ZOOM_CLK
ZOOM ENABLE
MOTOR_RESET
IRIS CONTROL
HOLE
A0
A15
CN201
Z_PTr
F_PTr
Z_LED
Q4802
INV
IC4801
IC4802
IC4803
BRIDGE DRIVER
DECODER
FOCUS 3
FOCUS 1
FOCUS 4
FOCUS 2
ZOOM 2
ZOOM 4
ZOOM 3
ZOOM 1
Q4801
IC4901,IC4902
HALL AMP
MOTOR DRIVE AMP
HE_IN+
HE_OUT−
HE_IN−
HE_OUT+
GND/DRIVE−
DUMP−
DRIVE+
DUMP+
R4917,C4907
LPF
IC4903
BUF
(COMP)
A
B
C
D
E
F
G
H
1
2
3
4
5


IC4201
FIELD MEMORY CONTROL INTERFACE
MATRIX
D/A CONV
D/A CONV
D/A CONV
Y
B-Y
R-Y
61
57
53
FL4201,FL4202
Q4205,Q4207–Q4209
BUF & LPF
Q4201,Q4203
BUF
Q4202,Q4204
BUF
IC4401
CLAMP
MOD
CLAMP
MOD
LIM
BLK
1
23
11
5
20
LPF
R4414,C4409
R4415,C4410
4
3
SUB CARRIER MODULE
IC4402
FL4401
Q4402
BPF & BUF
CN210
3 CAM_Y
5 CAM_C
To Y/C
CD0
CD3
YD0
YD7
CF0
CF3
YF0
YF7
22
25
35
42
30
33
43
50
C
Y
C
Y
98
95
88
81
94
91
80
72
IC4202
CD0
CD3
YD0
YD7
CF0
CF3
YF0
YF7
DB0
12 DB0
DB15
28 DB15
INTERFACE
LWE 4
RE 5
ALE 6
OMT 8
2 HD
1 VD
SIGNAL CONV
MEMORY DATA SELECTOR
THROUGH DATA SELECTOR
PROCESSOR & MIXER
SIGNAL DEC
WIPE /CINEMA
WIPE CTL
OUTPUT SIGNAL SELECTOR
MEMORY WRITE SELECTOR
NOT USED
INTERFACE
60
64
65
66
69
68
M CLK
RAE
RAD
WAD
WAE
FMWR
TMY7
42
TMY0
35
TMC3
32
TMC0
29
FMY7
45
FMY0
53
FMC3
54
FMC0
57
IC4203
8
10
9
READ ADD CTL
38
37
36
35
WRITE ADD CTL
39 TMY7
3 TMY0
4 TMC3
7 TMC0
31 FMY7
21 FMY0
19 FMC3
15 FMC0
2.8Mbit FILED MEMORY

4.5 MECHACON /MDA BLOCK DIAGRAM

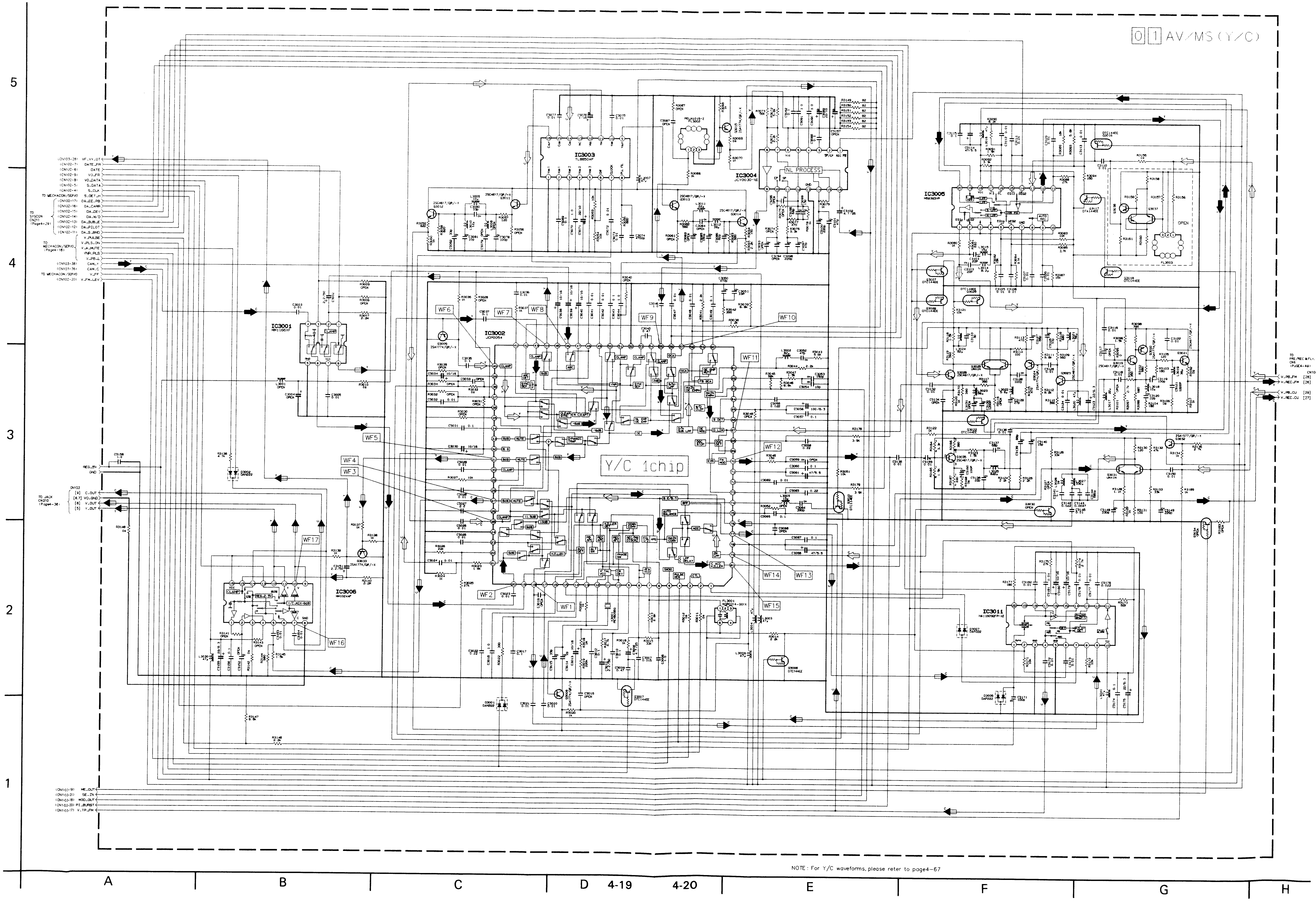

01 AV/MS(MECHACON/SERVO)
IC1001
AL_3.3V
CPU_VCC(AL_3.3V)
CPU_VCC(AL_3.3V)
REG_3.3V
AMP_VCC(REG_3.3V)
A/D_VREF(REG_3.3V)
From/To SYSCON
CN102
SRV_CS
SRV_VD
SC_DATA
CS_DATA
SRV_CLK
SRV_RDY
SERVO_CS
SERVO_VD
SERVO_VD(C_SYNC)
SRV_SYS_DATA
SYS_SRV_DATA
SERVO_CLK
SERVO_READY
DRUM_REF
DRUM_ON
DRFG_IN
DRPG_IN
AMP_VREF_OUT
CTL HEAD
A/C HEAD
CN107
CTL_HED+
CTL_HED-
CTL(+)
CTL(-)
X IN
X OUT
X1001
From SYSCON
SRV_RST
RESET(L)
CPFG_IN
CAP_EMG
CAP_REF
SYS_MODE
CAP_BRK
SYS_GND
CAP_FWD(L)
IC1002
R1201,R1202
C1202
LPF
R1203,R1204
C1204
CN101
CN6
DRUM_REF
DRUM_ON
DRUM_FG
DRUM_PG
VREF
CAP_FG
CAP_EMG
CAP_REF
SYS_MODE
CAP_BRK
CAP_FW_L
04 SENSOR(MDA)
IC1601
DIFFERENCE AMP & GAIN VARIABLE AMP & DRIVE CTL
HALL AMP & DRIVE WAVE COMP
REF POWER CTL
IC1602
WAVE FORM SHAPER
WAVE FORM SHAPER
CN1
D_COIL_U
D_COIL_U
D_COIL_V
D_COIL_V
D_COIL_W
D_COIL_W
CENTER
D_FG-
VREF
D_PG-
DRUM MOTOR
M
01 AV/MS
05 REAR
Q6201,Q6202
CP6001
DRUM POWER CTL
CP
UNREG 6V
D_PWR_ON
CN104
CN601
CN106
CN602
DR_UNREG
CAP_ERR
CAP_PWR
IC6001
-IN2(E) (CAP ERR)
OUT2 (CAPSTAN POWER)
Q6007
CAPSTAN POWER CTL
IC1651
REG_5V
R1651
R1652
REF
DC FIX
CTL AMP
BRAKE CTL
FG AMP
POWER CONTROL
SHORT DET
ERROR DET
HALL AMP & ROTATE CONTROL
DRIVE AMP
CN3
FG+
FG-
COIL_U
COIL_U
COIL_V
COIL_V
COIL_W
COIL_W
HG_U+
HG_U-
HG_V+
HG_V-
HG_W+
HG_W-
HG_BS+
HG_BS-
R1658
R1659
CAPSTAN MOTOR
M
5
4
3
2
1
A
B
C
D
E
F
G
H

4.6 MECHACON SCHEMATIC DIAGRAM


0 1 AV/MS (MECHACON/SERVO)
TO JACK CN211 (Page4-36) CN102 [24] RX_IN
TO SYSCON CN211 (Page4-30) [26] TX_INV
[25] SYS_TX
TO JIG CONN. (CN103-24) PB_CTL
CN101
[34] VREF
[12] CAP_FW_L
[37] CAP_BRK
[15] SYS_MODE
[13] DRUM_ON
[41] DRUM_PG
[42] DRUM_FG
[19] CAP_FG
[39] CAP_EMG
TO MDA CN6 (Page4-47,48)
[9] TU_SENS
[10] SUP_SENS
[36] STR_SENS
[38] EN_SENS
TO DECK OPERATION (Page4-53) CN105
[2] ZOOM_SW
[11] VTR_OPE2
[10] VTR_OPE1
TO REAR CN601 (Page4-56) CN104
[7] GND
[3] REG_5V
TO DECK OPERATION (Page4-53) (CN105-13) PWR_LED
TO MDA CN6 (Page4-47) CN101
[14] CAP_REF
[11] DRUM_REF
TO SYSCON CN211 (Page4-29,30) CN102
[23] SRV_CS
[39,40] AL_3.3V
TO REAR CN601 (Page4-56) (CN104-5) REG_3.3V
IC1003 MC74HC132ADT
IC1001 M37774M3L602GP
IC1002 TC74HCT7007AF
WF1
WF2
WF3
WF4
SVHS_SW (CN101-24) TO MDA CN6 (Page4-48)
S_DET_H TO Y/C (Page4-19)
CN102
SRV_VD [32]
SRV_RDY [27]
SRV_CLK [31]
CS_DATA [30]
SRV_RST [29]
SC_DATA [28]
TO SYSCON CN210 (Page4-20)
V_PLS_ON TO Y/C (Page4-19)
CN101
REEL_LED [7]
TAPE_LED [8]
TO MDA CN6 (Page4-48)
CN106
UNREG [6,7]
LAMP_ON [5]
TO REAR CN602 (Page4-56)
CN101
CAM_SW_A [31]
CAM_SW_B [32]
CAM_SW_C [33]
TO ROTARY ENCODER UNIT
CN107
CTL_HED- [7]
CTL_HED+ [6]
CTL_ERS- [9]
REG_5V [8]
TO A/C HEAD
FEH_ON (CN101-5) TO PRE/REC & FLY. ERASE CN6 (Page4-49)
YNR_PLS TO Y/C (Page4-19)
LOAD_RV (CN101-16)
LOAD_FW (CN101-17)
TO MDA CN6 (Page4-47)
V_A_MUTE TO Y/C (Page4-19)
V_RC_MUT (CN101-2)
V_PULSE TO Y/C (Page4-19)
V_PB_L (CN101-6)
V_REC_L (CN101-30)
TO PRE/REC & FLY. ERASE CN6 (Page4-49)
A_PB
A_BIAS_L
TO AUDIO (Page4-22)
CN103
V_FF [25]
V_HFF [26]
TO JIG CONN.
V_OVL (CN101-1) TO PRE/REC & FLY. ERASE CN6 (Page4-49)
1
2
3
4
5
A
B
C
D
E
F
G
H

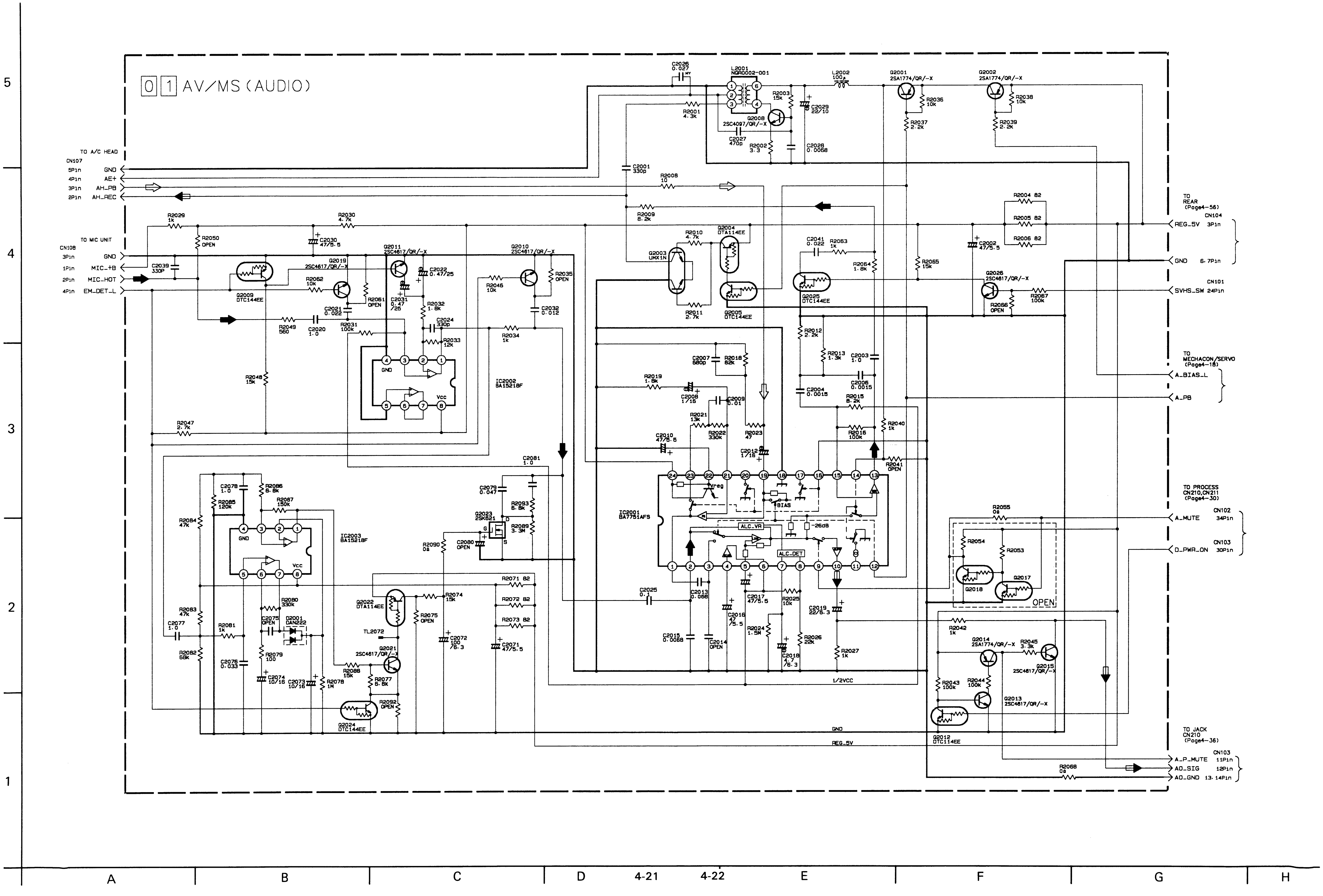
NOTE: For MECHACON waveforms, please refer to page 4-67.

4.7 Y/C SCHEMATIC DIAGRAM


01 AV/MS (Y/C)
(CN103-28) VF_VY_DT
(CN102-7) DATE_FR
(CN102-6) DATE
(CN102-9) VO_FR
(CN102-8) VO_DATA
(CN102-5) S_DATA
(CN102-4) S_CLK
TO MECHACON/SERVO S_DET_H
TO SYSCON CN211 (Page4-29)
(CN102-17) DA_EE_PB
(CN102-16) DA_CARR
(CN102-15) DA_DEV
(CN102-14) DA_W/D
(CN102-13) DA_SUB_E
(CN102-12) DA_PILOT
(CN102-11) DA_S_BND
TO MECHACON/SERVO (Page4-18)
V_PULSE
V_PLS_ON
V_A_MUTE
YNR_PLS
V_PB_L
(CN103-38) CAM_Y
(CN103-36) CAM_C
TO MECHACON/SERVO V_FF
(CN102-20) V_FM_LEV
REG_5V
GND
C3158 1.0
TO JACK CN210 (Page4-38)
CN103
[9] C_OUT
[6,7] VO_GND
[8] V_OUT
[5] Y_OUT
R3148 0Ω
(CN103-19) ME_OUT
(CN103-21) SE_IN
(CN103-18) MOD_OUT
(CN103-20) PI_BURST
(CN103-17) V_TP_FM
TO PRE/REC & FLY. ERASE CN6 (PAGE4-49)
CN101
V_PB_FM [28]
V_REC_FM [26]
V_PB_CU [29]
V_REC_CU [27]
IC3001 MM1166XF
IC3002 JCP0054
IC3003 TL8850AF
IC3004 JCY0030-XE
IC3005 M52383VP
IC3006 MM1024AF
IC3011 HA118092FP-XE
NL PROCESS
FL3002 PELN1015-Z
FL3003
Y/C 1chip
WF1
WF2
WF3
WF4
WF5
WF6
WF7
WF8
WF9
WF10
WF11
WF12
WF13
WF14
WF15
WF16
WF17
Q3009 2SA1774/QR/-X
Q3013 2SC4617/QR/-X
Q3014 2SC4617/QR/-X
Q3015 2SA1774/QR/-X
Q3033 2SA1774/QR/-X
D3007 DAP222
5
4
3
2
1
A
B
C
D
E
F
G
H

NOTE: For Y/C waveforms, please refer to page4-67

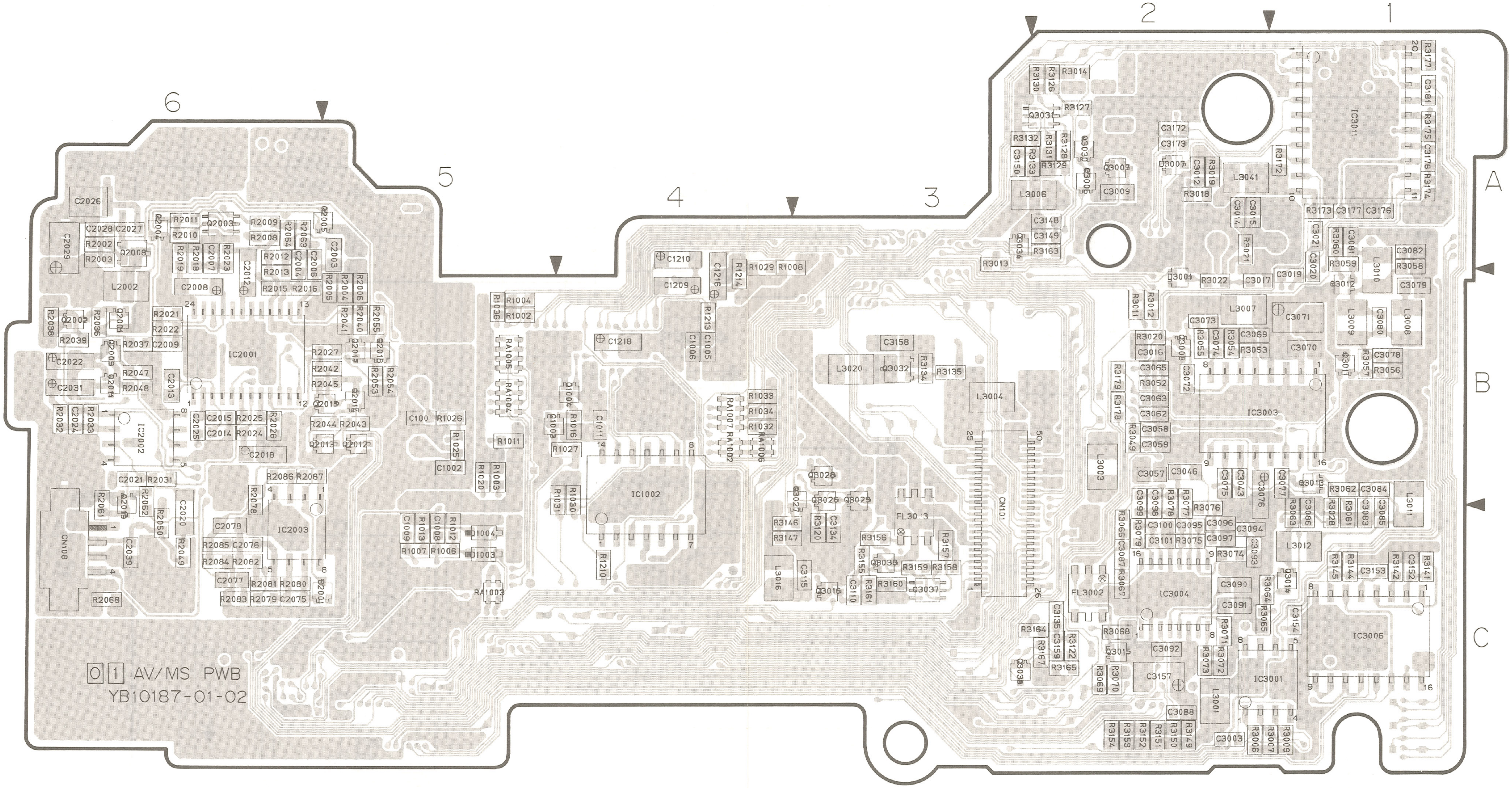
4.8 AUDIO SCHEMATIC DIAGRAM



01 AV/MS (AUDIO)
TO A/C HEAD
CN107
5Pin GND
4Pin AE+
3Pin AH_PB
2Pin AH_REC
TO MIC UNIT
CN108
3Pin GND
1Pin MIC_+B
2Pin MIC_HOT
4Pin EM_DET_L
C2026 0.027 MY
L2001 NQR0002-001
L2002 100µ
Q2001 2SA1774/QR/-X
Q2002 2SA1774/QR/-X
R2001 4.3k
R2003 15k
C2029 22/10
Q2008 2SC4097/QR/-X
C2027 470p
R2002 3.3
C2028 0.0068
R2036 10k
R2037 2.2k
R2038 10k
R2039 2.2k
C2001 330p
R2008 10
R2009 8.2k
R2004 82
R2005 82
R2006 82
TO REAR (Page4-56)
CN104
REG_5V 3Pin
GND 6,7Pin
CN101
SVHS_SW 24Pin
R2029 1k
R2030 4.7k
R2050 OPEN
C2030 47/5.5
C2039 330P
Q2009 DTC144EE
Q2011 2SC4617/QR/-X
Q2019 2SC4617/QR/-X
C2022 0.47/25
R2062 10k
R2061 OPEN
C2031 0.47 /25
Q2010 2SC4617/QR/-X
R2035 OPEN
R2046 10k
R2032 1.8k
C2021 0.022
C2024 330p
C2032 0.012
R2049 560
C2020 1.0
R2031 100k
R2033 12k
R2034 1k
IC2002 BA15218F
GND
Vcc
R2048 15k
R2047 2.7k
R2010 4.7k
Q2004 DTA114EE
Q2003 UMX1N
R2011 2.7k
Q2005 DTC144EE
C2041 0.022
R2063 1k
R2064 1.8k
Q2025 DTC144EE
R2065 15k
C2002 47/5.5
Q2026 2SC4617/QR/-X
R2067 100k
R2066 OPEN
R2012 2.2k
R2013 1.3k
C2003 1.0
C2007 680p
R2018 82k
R2019 1.8k
C2008 1/16
C2009 0.01
C2004 0.0015
C2006 0.0015
R2015 8.2k
R2021 13k
R2022 330k
R2023 47
R2016 100k
R2040 1k
C2010 47/6.5
C2012 1/16
R2041 OPEN
TO MECHACON/SERVO (Page4-18)
A_BIAS_L
A_PB
C2081 1.0
C2078 1.0
R2086 6.8k
R2085 120k
R2087 150k
R2084 47k
IC2003 BA15218F
C2079 0.047
R2093 6.8k
Q2023 2SK621
R2089 3.3M
R2090 0Ω
C2080 OPEN
IC2001 BA7751AFS
Vreg
BIAS
ALC_VR
-26dB
ALC_DET
TO PROCESS CN210,CN211 (Page4-30)
R2055 0Ω
CN102
A_MUTE 34Pin
CN103
D_PWR_ON 30Pin
R2054
R2053
Q2018
Q2017
OPEN
R2083 47k
C2077 1.0
R2081 1k
R2082 68k
C2076 0.033
R2080 330k
C2075 OPEN
D2001 DAN222
R2079 100
C2074 10/16
C2073 10/16
R2078 1M
Q2022 DTA114EE
R2074 15k
R2075 OPEN
TL2072
Q2021 2SC4617/QR/-X
R2088 15k
R2077 6.8k
R2092 OPEN
Q2024 DTC144EE
C2072 100 /6.3
R2071 82
R2072 82
R2073 82
C2071 47/5.5
C2025 0.1
C2013 0.068
C2015 0.0068
C2014 OPEN
C2016 47 /5.5
C2017 47/5.5
R2024 1.5M
R2025 10k
C2018 4.7 /6.3
R2026 22k
C2019 22/6.3
R2027 1k
1/2VCC
GND
REG_5V
R2042 1k
Q2014 2SA1774/QR/-X
R2045 3.3k
Q2015 2SC4617/QR/-X
R2043 100k
R2044 100k
Q2013 2SC4617/QR/-X
Q2012 DTC114EE
TO JACK CN210 (Page4-36)
CN103
A_P_MUTE 11Pin
AO_SIG 12Pin
AO_GND 13,14Pin
R2068 0Ω
5
4
3
2
1
A
B
C
D
E
F
G
H

4.9 AV/MS CIRCUIT BOARD

FOIL SIDE (B)


1
2
3
4
5
6
A
B
C
IC2001
IC2002
IC2003
IC1002
IC3001
IC3003
IC3004
IC3006
IC3011
CN101
CN106
FL3002
L3004
L3007
L3012
01 AV/MS PWB
YB10187-01-02

COMPONENT PARTS LOCATION GUIDE (AV/MS PWB)

CAPACITOR

REF.No.	LOCATION		
C1001	B	C	5B
C1002	B	C	5B
C1005	B	C	4B
C1006	B	C	4B
C1007	A	C	5C
C1008	B	C	5C
C1009	B	C	5C
C1010	A	C	5B
C1011	B	C	4B
C1012	A	C	4B
C1013	A	C	4B
C1014	A	C	4B
C1015	A	C	4B
C1016	A	C	4B
C1201	A	C	4C
C1202	A	C	4C
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C1208	A	C	4A
C1209	B	C	4B
C1210	B	C	4A
C1211	A	C	4B
C1212	A	C	5A
C1213	A	C	4B
C1214	A	C	5B
C1215	A	C	5A
C1216	B	C	4B
C1217	A	C	4B
C1218	B	C	4B
C2001	A	C	6A
C2002	A	C	5B
C2003	B	C	5A
C2004	B	C	6A
C2006	B	C	6A
C2007	B	C	6A
C2008	B	C	6B
C2009	B	C	6B
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C2013	B	C	6B
C2014	B	C	6B
C2015	B	C	6B
C2016	A	C	6B
C2017	A	C	6B
C2018	B	C	6B
C2019	A	C	6B
C2020	B	C	6C
C2021	B	C	6B
C2022	B	C	6B
C2024	B	C	6B
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C2027	B	C	6A
C2028	B	C	6A
C2029	B	C	6A
C2030	A	C	6B
C2031	B	C	6B
C2032	A	C	6B
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C3097	B	C	2C
C3098	B	C	2B
C3099	B	C	2B
C3100	B	C	2C
C3101	B	C	2C
C3102	A	C	2C
C3103	A	C	4B
C3104	A	C	3B
C3105	A	C	3C
C3106	A	C	3C
C3107	A	C	3C
C3108	A	C	3C
C3109	A	C	3C
C3110	B	C	3C
C3111	A	C	3C
C3112	A	C	3C
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C3114	A	C	4C
C3115	B	C	3C
C3116	A	C	3C
C3117	A	C	3C
C3118	A	C	3C
C3119	A	C	3C
C3120	A	C	3C
C3121	A	C	3C
C3122	A	C	3C
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C3124	A	C	3B
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C3129	A	C	3B
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C3131	A	C	3B
C3132	A	C	3B
C3133	A	C	3B
C3134	B	C	3C
C3135	B	C	2C
C3136	A	C	3C
C3137	A	C	3C
C3138	A	C	3C
C3139	A	C	3C
C3140	A	C	3C
C3141	A	C	2A
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C3143	A	C	2A
C3144	A	C	3A
C3145	A	C	2A
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C3175	A	C	1A
C3176	B	C	1A
C3177	B	C	1A
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C3179	A	C	1A
C3180	A	C	1A
C3181	B	C	1A
C3182	A	C	2A

CONNECTOR

REF.No.	LOCATION		
CN101	B	C	3C
CN102	A	C	5C
CN103	A	C	2C
CN104	A	C	2A
CN105	A	C	1A
CN106	A	C	1A
CN107	A	C	6A
CN108	B	C	6C

DIODE

REF.No.	LOCATION		
D1002	A	C	5C
D1003	B	C	5C
D1004	B	C	5C
D2001	B	C	5C
D3001	B	C	2B
D3002	A	C	4C
D3006	A	C	2A
D3007	B	C	2A

IC

REF.No.	LOCATION		
IC1001	A	C	4B
IC1002	B	C	4B
IC1003	A	C	5C
IC2001	B	C	6B
IC2002	B	C	6B
IC2003	B	C	6C
IC3001	B	C	1C
IC3002	A	C	2B
IC3003	B	C	2B
IC3004	B	C	2C
IC3005	A	C	3C
IC3006	B	C	1C
IC3011	B	C	1A

COIL

REF.No.	LOCATION		
L2001	A	C	6A
L2002	B	C	6B
L3001	B	C	2C
L3002	A	C	2C
L3003	B	C	2B
L3004	B	C	3B
L3005	A	C	2B
L3006	B	C	2A
L3007	B	C	2B
L3008	B	C	1B
L3009	B	C	1B
L3010	B	C	1B
L3011	B	C	1B
L3012	B	C	1C
L3014	A	C	4C
L3015	A	C	3B
L3016	B	C	4C
L3017	A	C	3C
L3018	A	C	3C
L3019	A	C	3C
L3020	B	C	3B
L3021	A	C	3B
L3022	A	C	3B
L3023	A	C	3B
L3024	A	C	3B
L3025	A	C	3C
L3026	A	C	2A
L3027	A	C	3A
L3030	A	C	1C
L3041	B	C	2A

TRANSISTOR

REF.No.	LOCATION		
Q1001	A	C	4B
Q1002	A	C	4A
Q1003	B	C	5B
Q1004	B	C	4B
Q1201	A	C	5B
Q1202	A	C	5A
Q2001	B	C	6B
Q2002	B	C	6B
Q2003	B	C	6A
Q2004	B	C	6A
Q2005	B	C	5A
Q2008	B	C	6A
Q2009	B	C	6B
Q2010	A	C	6B
Q2011	B	C	6B
Q2012	B	C	5B
Q2013	B	C	5B
Q2014	B	C	5B
Q2015	B	C	5B
Q2017	B	C	5B
Q2018	B	C	5B
Q2019	B	C	6B
Q2021	A	C	6B
Q2022	A	C	6B
Q2023	A	C	6B
Q2024	A	C	6B
Q2025	A	C	6A
Q2026	A	C	6A
Q3006	B	C	2A
Q3007	B	C	2A
Q3008	B	C	2B
Q3009	A	C	1C
Q3010	A	C	2B
Q3011	B	C	1B
Q3012	B	C	1B
Q3013	B	C	1B
Q3014	B	C	1C
Q3015	B	C	2C
Q3016	B	C	3C
Q3017	A	C	4C
Q3018	A	C	4C
Q3019	A	C	3C
Q3020	A	C	3C
Q3021	A	C	3C
Q3022	A	C	3B
Q3023	A	C	3B
Q3024	A	C	3B

REF.No.	LOCATION		
Q3025	A	C	3B
Q3026	B	C	3B
Q3027	B	C	3B
Q3028	B	C	3B
Q3029	B	C	3B
Q3030	B	C	2A
Q3031	B	C	2A
Q3032	B	C	3B
Q3033	A	C	1C
Q3034	B	C	3A
Q3035	B	C	3C
Q3037	B	C	3C
Q3038	B	C	3C
Q4402	B	C	3D
RESISTOR			
R1001	A	C	4C
R1002	B	C	5B
R1003	B	C	5B
R1004	B	C	5B
R1006	B	C	5C
R1007	B	C	5C
R1008	B	C	4A
R1009	A	C	5B
R1010	A	C	5C
R1011	B	C	5B
R1012	B	C	5C
R1013	B	C	5C
R1014	A	C	4A
R1015	A	C	3A
R1016	B	C	4B
R1017	A	C	4B
R1018	A	C	5C
R1019	A	C	5C
R1020	B	C	5B
R1021	A	C	5C
R1025	B	C	5B
R1026	B	C	5B
R1027	B	C	4B
R1028	A	C	4C
R1029	B	C	4A
R1030	B	C	4B
R1031	B	C	5B
R1032	B	C	4B
R1033	B	C	4B
R1034	B	C	4B
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R1037	A	C	5B
R1047	A	C	4B
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R1203	A	C	4C
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R1212	A	C	4B
R1213	B	C	4B
R1214	B	C	4B
R2001	A	C	6A
R2002	B	C	6A
R2003	B	C	6A
R2004	B	C	5B
R2005	B	C	5B
R2006	B	C	5B
R2008	B	C	6A
R2009	B	C	6A
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R2034	A	C	6B
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R3013	B	C	3A
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R3019	B	C	2A
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R3023	A	C	1B
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R3027	A	C	1B
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R3048	A	C	2B
R3049	B	C	2B
R3051	A	C	3B
R3052	B	C	2B
R3053	B	C	2B
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R3073	B	C	2C
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R3079	B	C	2C
R3080	A	C	4C
R3081	A	C	4B
R3082	A	C	3C
R3083	A	C	3C
R3084	A	C	3C
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R3087	A	C	3C
R3088	A	C	3C
R3089	A	C	3C
R3090	A	C	3C
R3091	A	C	3C
R3092	A	C	4C
R3093	A	C	3C
R3094	A	C	4C
R3095	A	C	3C
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R3098	A	C	3C
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R3105	A	C	3C
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R3108	A	C	3B
R3109	A	C	3B
R3110	A	C	3B
R3111	A	C	3B
R3112	A	C	3B
R3113	A	C	3B
R3114	A	C	3B
R3115	A	C	3B
R3116	A	C	3B
R3117	A	C	3B
R3118	A	C	3B
R3119	A	C	3B
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R3121	A	C	3B
R3122	B	C	2C
R3123	A	C	3C
R3124	A	C	3C
R3125	A	C	3C
R3126	B	C	2A
R3127	B	C	2A
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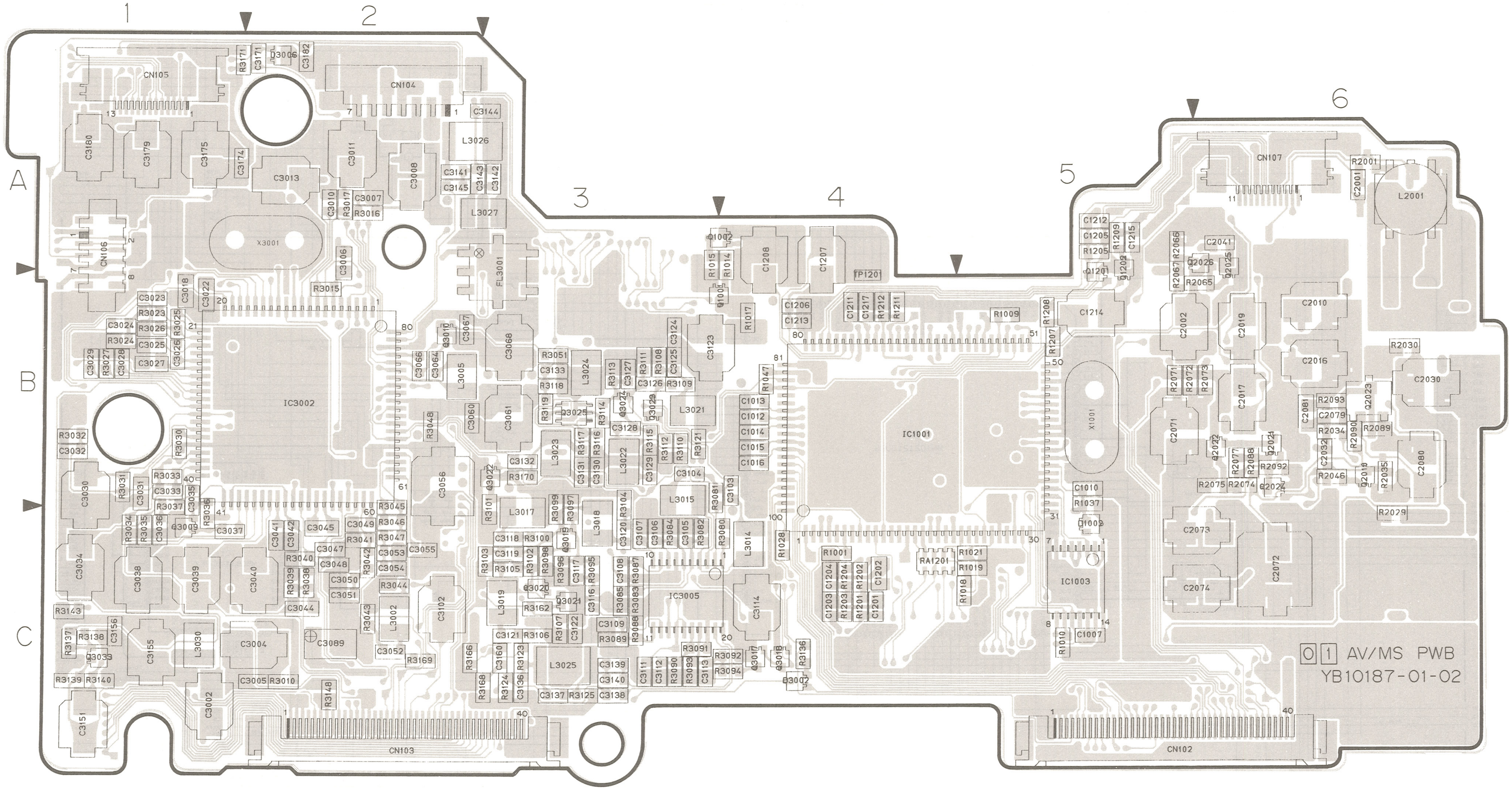
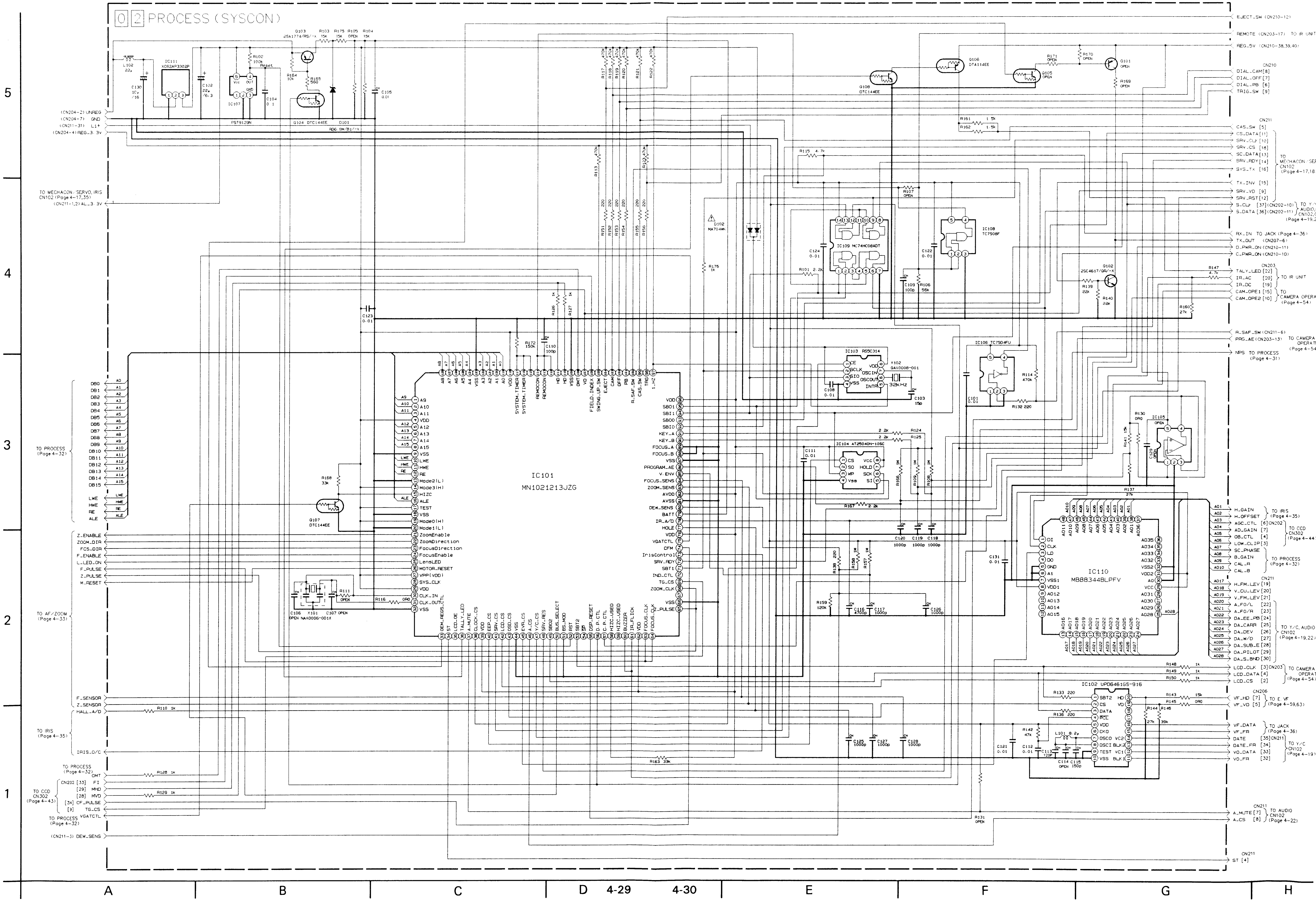
R3132	B	C	3A
R3133	B	C	2A
R3134	B	C	3B
R3135	B	C	3B
R3136	A	C	4C
R3137	A	C	1C
R3138	A	C	1C
R3139	A	C	1C
R3140	A	C	1C
R3141	B	C	1C
R3142	B	C	1C
R3143	A	C	1C
R3144	B	C	1C
R3145	B	C	1C
R3146	B	C	4C
R3147	B	C	4C
R3148	A	C	2C
R3149	B	C	2C
R3150	B	C	2C
R3151	B	C	2C
R3152	B	C	2C
R3153	B	C	2C
R3154	B	C	2C
R3155	B	C	3C
R3156	B	C	3C
R3157	B	C	3C
R3158	B	C	3C
R3159	B	C	3C
R3160	B	C	3C
R3161	B	C	3C
R3162	A	C	3C
R3163	B	C	2A
R3164	B	C	2C
R3165	B	C	2C
R3166	A	C	2C
R3167	B	C	2C
R3168	A	C	3C
R3169	A	C	2C
R3170	A	C	3B
R3171	A	C	1A
R3172	B	C	1A
R3173	B	C	1A
R3174	B	C	1A
R3175	B	C	1A
R3177	B	C	1A
R3178	B	C	2B
R3179	B	C	2B
R4401	B	C	3D
R4410	B	C	3D
R4411	B	C	3D
R4428	B	C	3D
RA1002	B	C	4B
RA1003	B	C	5C
RA1004	B	C	5B
RA1005	B	C	5B
RA1006	B	C	4B
RA1007	B	C	4B
RA1201	A	C	4C
OTHER			
FL3001	A	C	3B
FL3002	B	C	2C
FL3003	B	C	3C

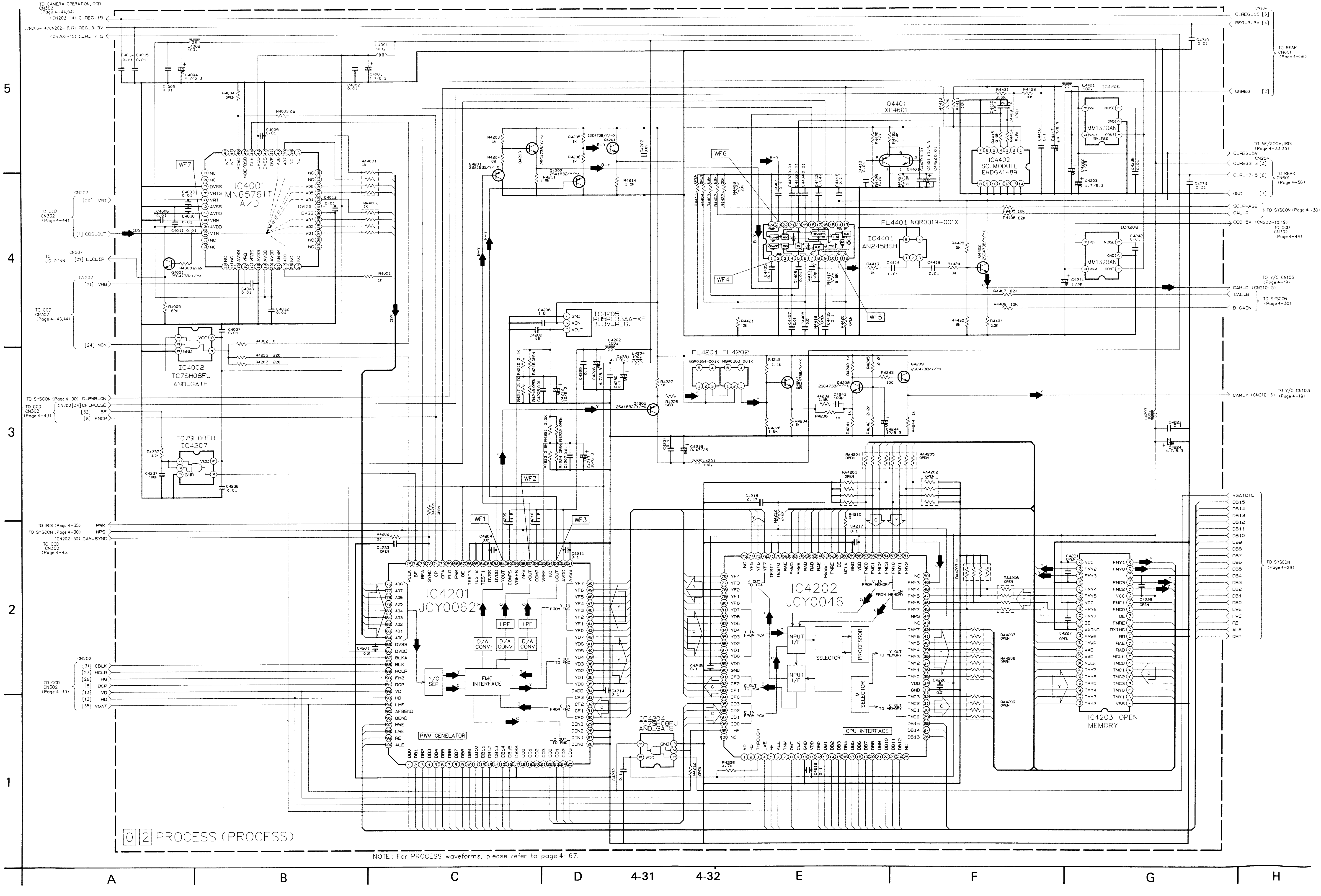
COMPONENT SIDE (A)


1
2
3
4
5
6
A
B
C
CN105
CN104
CN106
CN107
CN103
CN102
IC3002
IC1001
IC1003
IC3005
X3001
X1001
FL3001
L2001
01 AV/MS PWB
YB10187-01-02

4.10 SYSCON SCHEMATIC DIAGRAM

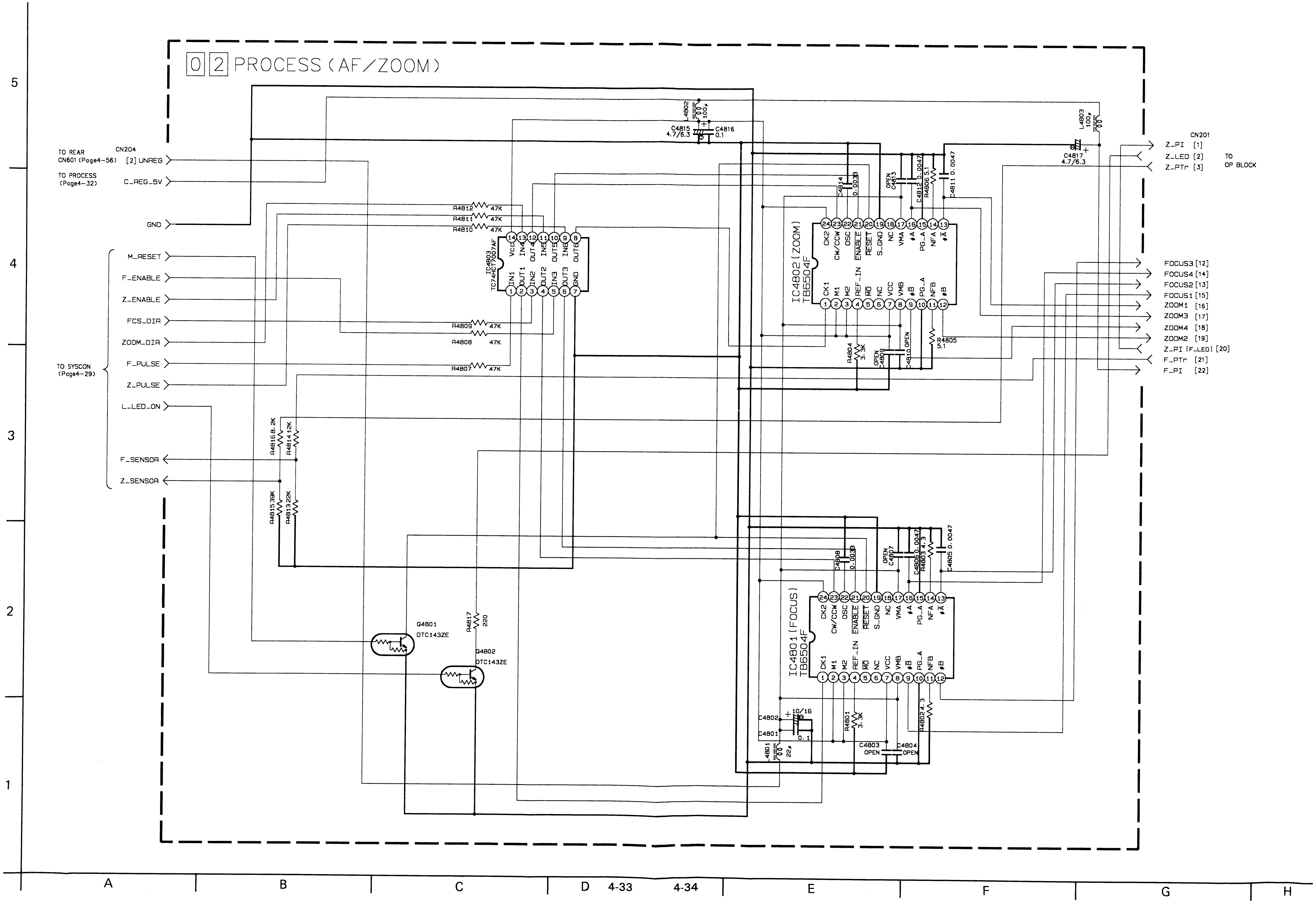

02 PROCESS (SYSCON)
IC101
MN1021213JZG
IC110
MB88344BLPFV
IC102 UPD6461GS-916
IC103 RS5C314
IC104 AT25040N-10SC
IC105
IC106 TC7S04FU
IC107 PST9129N
IC108 TC7S08F
IC109 MC74HC08ADT
IC111 XC62AP3302P
Q101
Q102 2SC4617/QR/-x
Q103 2SA1774/RS/-x
Q104 DTC144EE
Q105
Q106 DTA114EE
Q107 DTC144EE
Q108 DTC144EE
D101
D102 MA704WK
X101 OPEN NAX0006-001X
X102 QAX0008-001 32KHz
EJECT_SW (CN210-12)
REMOTE (CN203-17) TO IR UNIT
REG_5V (CN210-38,39,40)
CN210
DIAL_CAM [8]
DIAL_OFF [7]
DIAL_PB [6]
TRIG_SW [9]
CN211
CAS_SW [5]
CS_DATA [11]
SRV_CLK [10]
SRV_CS [18]
SC_DATA [13]
SRV_RDY [14]
SYS_TX [16]
TX_INV [15]
SRV_VD [9]
SRV_RST [12]
TO MECHACON/SERVO CN102 (Page 4-17,18)
S_CLK [37] (CN202-10)
S_DATA [36] (CN202-11)
TO Y/C, AUDIO, CCD CN102, CN302 (Page 4-19,22,45)
RX_IN TO JACK (Page 4-36)
TX_OUT (CN207-6)
D_PWR_ON (CN210-11)
C_PWR_ON (CN210-10)
CN203
TALY_LED [22]
IR_AC [20]
IR_DC [19]
TO IR UNIT
CAM_OPE1 [15]
CAM_OPE2 [10]
TO CAMERA OPERATION (Page 4-54)
R_SAF_SW (CN211-6)
PRG_AE (CN203-13)
TO CAMERA OPERATION (Page 4-54)
NPS TO PROCESS (Page 4-31)
H_GAIN
H_OFFSET
TO IRIS (Page 4-35)
AGC_CTL [6]
AD_GAIN [7]
OB_CTL [4]
LOW_CLIP [3]
CN202 TO CCD CN302 (Page 4-44)
SC_PHASE
B_GAIN
CAL_R
CAL_B
TO PROCESS (Page 4-32)
CN211
H_FM_LEV [19]
V_CU_LEV [20]
V_FM_LEV [21]
A_FO/L [22]
A_FO/R [23]
DA_EE_PB [24]
DA_CARR [25]
DA_DEV [26]
DA_W/D [27]
DA_SUB_E [28]
DA_PILOT [29]
DA_S_BND [30]
TO Y/C, AUDIO CN102 (Page 4-19,22)
LCD_CLK [3]
LCD_DATA [4]
LCD_CS [2]
CN203 TO CAMERA OPERATION (Page 4-54)
CN206
VF_HD [7]
VF_VD [5]
TO E. VF (Page 4-59,63)
VF_DATA
VF_FR
TO JACK (Page 4-36)
DATE [35]
DATE_FR [34]
VD_DATA [33]
VD_FR [32]
CN211 TO Y/C CN102 (Page 4-19)
CN211
A_MUTE [7]
A_CS [8]
TO AUDIO CN102 (Page 4-22)
CN211
ST [4]
(CN204-2) UNREG
(CN204-7) GND
(CN211-31) LI+
(CN204-4) REG_3.3V
TO MECHACON/SERVO, IRIS CN102 (Page 4-17,35)
(CN211-1,2) AL_3.3V
TO PROCESS (Page 4-32)
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
DB8
DB9
DB10
DB11
DB12
DB13
DB14
DB15
LWE
HWE
RE
ALE
TO AF/ZOOM (Page 4-33)
Z_ENABLE
ZOOM_DIR
FCS_DIR
F_ENABLE
L_LED_ON
F_PULSE
Z_PULSE
M_RESET
F_SENSOR
Z_SENSOR
HALL_A/D
TO IRIS (Page 4-35)
IRIS_O/C
TO PROCESS (Page 4-32)
OMT
TO CCD CN302 (Page 4-43)
CN202 [33] FI
[29] MHD
[28] MVD
[34] CF_PULSE
[9] TG_CS
TO PROCESS (Page 4-32)
VGATCTL
(CN211-3) DEW_SENS
A
B
C
D
E
F
G
H
1
2
3
4
5

4.11 PROCESS SCHEMATIC DIAGRAM


IC4001 MN65761T A/D
IC4002 TC7SH08FU AND_GATE
TC7SH08FU IC4207
IC4205 RH5RL33AA-XE 3.3V_REG.
IC4201 JCY0062
IC4202 JCY0046
IC4203 OPEN MEMORY
IC4204 TC7SH08FU AND_GATE
IC4401 AN2458SH
FL4401 NQR0019-001X
FL4201 FL4202
IC4402 SC_MODULE EHDGA1489
IC4206 MM1320AN
IC4208 MM1320AN
Q4401 XP4601
WF1
WF2
WF3
WF4
WF5
WF6
WF7
Y/C SEP
FMC INTERFACE
D/A CONV
LPF
PWM GENELATOR
INPUT I/F
SELECTOR
PROCESSOR
M SELECTOR
CPU INTERFACE
TO CAMERA OPERATION, CCD CN302 (Page 4-44,54)
TO CCD CN302 (Page 4-44)
TO JIG CONN
TO CCD CN302 (Page 4-43,44)
TO SYSCON (Page 4-30) C_PWR_ON
TO CCD CN302 (Page 4-43)
TO IRIS (Page 4-35) PWM
TO SYSCON (Page 4-30) NPS
TO REAR CN601 (Page 4-56)
TO AF/ZOOM, IRIS (Page 4-33,35)
TO SYSCON (Page 4-30)
TO Y/C CN103 (Page 4-19)
TO SYSCON (Page 4-29)
02 PROCESS (PROCESS)
1
2
3
4
5
A
B
C
D
E
F
G
H

NOTE: For PROCESS waveforms, please refer to page 4-67.

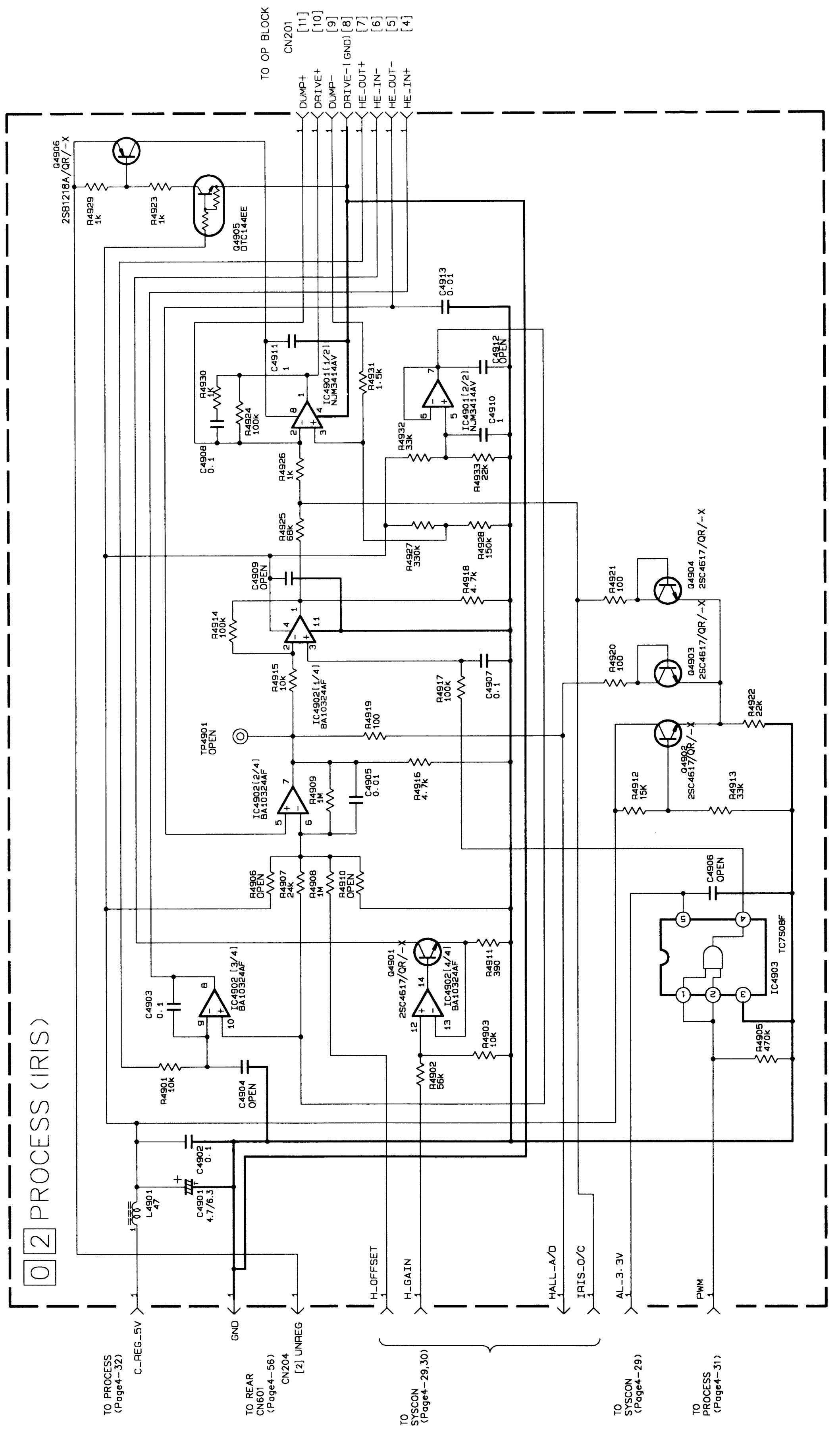
4.12 AF ZOOM SCHEMATIC DIAGRAM



02 PROCESS (AF/ZOOM)
TO REAR CN601 (Page4-56)
CN204
[2] UNREG
TO PROCESS (Page4-32)
C_REG_5V
GND
M_RESET
F_ENABLE
Z_ENABLE
FCS_DIR
ZOOM_DIR
F_PULSE
Z_PULSE
L_LED_ON
F_SENSOR
Z_SENSOR
TO SYSCON (Page4-29)
R4812 47K
R4811 47K
R4810 47K
R4809 47K
R4808 47K
R4807 47K
IC4803 TC74HCT7007AF
Vcc IN4 OUT4 IN5 OUT5 IN6 OUT6
IN1 OUT1 IN2 OUT2 IN3 OUT3 GND
R4816 8.2K
R4814 12K
R4815 39K
R4813 22K
Q4801 DTC143ZE
Q4802 DTC143ZE
R4817 220
L4802 100µ
C4815 4.7/6.3
C4816 0.1
L4803 100µ
C4817 4.7/6.3
IC4802 (ZOOM) TB6504F
CK2 CW/CCW OSC ENABLE RESET S_GND NC VMA φA PG_A NFA φĀ
CK1 M1 M2 REF_IN MO NC VCC VMB φB PG_A NFB φB̄
C4814 0.0033
OPEN C4813
C4812 0.0047
R4806 5.1
C4811 0.0047
R4804 3.3K
OPEN C4809
C4810 OPEN
R4805 5.1
IC4801 (FOCUS) TB6504F
C4808 0.0033
OPEN C4807
C4806 0.0047
R4803 4.3
C4805 0.0047
C4802 10/16
C4801 0.1
L4801 22µ
R4801 3.3K
C4803 OPEN
C4804 OPEN
R4802 4.3
CN201
Z_PI [1]
Z_LED [2]
Z_PTr [3]
TO OP BLOCK
FOCUS3 [12]
FOCUS4 [14]
FOCUS2 [13]
FOCUS1 [15]
ZOOM1 [16]
ZOOM3 [17]
ZOOM4 [18]
ZOOM2 [19]
Z_PI [F_LED] [20]
F_PTr [21]
F_PI [22]
5
4
3
2
1
A
B
C
D
E
F
G
H

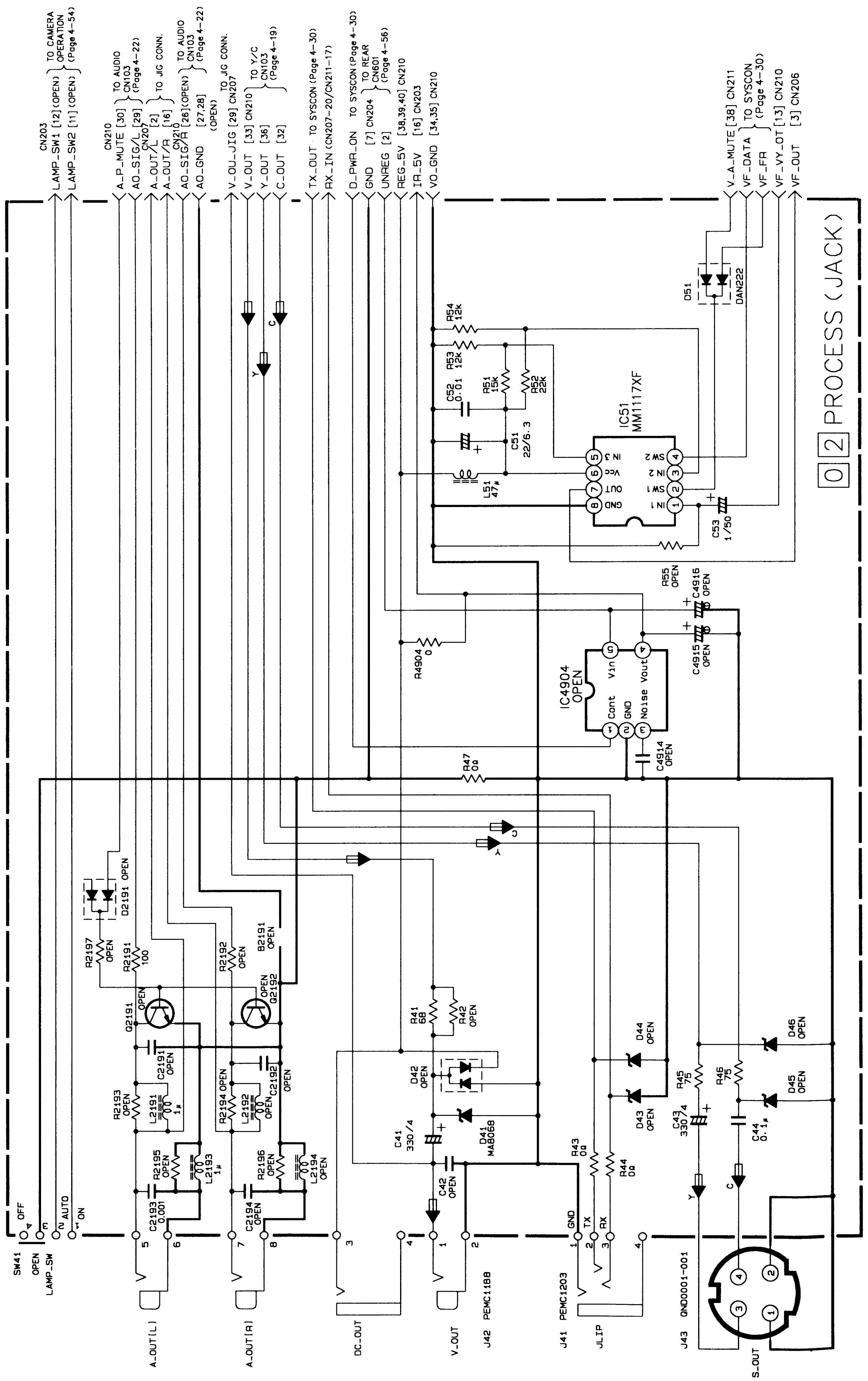
4.13 IRIS AND JACK SCHEMATIC DIAGRAMS

-IRIS-



TO OP BLOCK
CN201
DUMP+ [11]
DRIVE+ [10]
DUMP- [9]
DRIVE-(GND) [8]
HE_OUT+ [7]
HE_IN- [6]
HE_OUT- [5]
HE_IN+ [4]
Q4906 2SB1218A/QR/-X
R4929 1K
R4923 1K
Q4905 DTC144EE
C4913 0.01
C4911 1
IC4901(1/2) NJM3414AV
IC4901(2/2) NJM3414AV
C4912 OPEN
R4931 1.5K
C4910 1
R4930 1K
R4924 100K
C4908 0.1
R4926 1K
R4932 33K
R4933 22K
R4925 68K
R4927 330K
R4928 150K
C4909 OPEN
R4918 4.7K
R4914 100K
R4921 100
Q4904 2SC4617/QR/-X
R4920 100
Q4903 2SC4617/QR/-X
R4915 10K
IC4902(1/4) BA10324AF
R4917 100K
C4907 0.1
R4922 22K
TP4901 OPEN
R4919 100
Q4902 2SC4617/QR/-X
IC4902(2/4) BA10324AF
R4909 1M
C4905 0.01
R4916 4.7K
R4912 15K
R4913 33K
R4906 OPEN
R4907 24K
R4908 1M
R4910 OPEN
C4906 OPEN
TC7S08F
IC4903
Q4901 2SC4617/QR/-X
R4911 390
C4903 0.1
IC4902(3/4) BA10324AF
IC4902(4/4) BA10324AF
R4903 10K
R4905 470K
R4901 10K
C4904 OPEN
R4902 56K
C4902 0.1
C4901 4.7/6.3
L4901 47μ
02 PROCESS (IRIS)
C_REG_5V
GND
UNREG
H_OFFSET
H_GAIN
HALL_A/D
IRIS_O/C
AL_3.3V
PWM
TO PROCESS (Page4-32)
TO REAR CN601 (Page4-56) CN204 [2] UNREG
TO SYSCON (Page4-29,30)
TO SYSCON (Page4-29)
TO PROCESS (Page4-31)

-JACK-



CN203
LAMP_SW1 [12] (OPEN) TO CAMERA OPERATION
LAMP_SW2 [11] (OPEN) (Page4-54)
CN210
A_P_MUTE [30] TO AUDIO
AO_SIG/L [29] CN103 (Page4-22)
A_OUT/L [2] CN207 TO JG CONN.
A_OUT/R [16] CN210
AO_SIG/R [26] (OPEN) TO AUDIO CN103 (Page4-22)
AO_GND [27,28] (OPEN)
V_OU_JIG [29] CN207 TO JG CONN.
V_OUT [33] CN210 TO Y/C
Y_OUT [36] CN103
C_OUT [32] (Page4-19)
TX_OUT TO SYSCON (Page4-30)
RX_IN (CN207-20/CN211-17)
D_PWR_ON TO SYSCON (Page4-30)
GND [7] CN204 TO REAR
UNREG [2] CN601 (Page4-56)
REG_5V [38,39,40] CN210
IR_5V [16] CN203
VO_GND [34,35] CN210
V_A_MUTE [38] CN211
VF_DATA TO SYSCON
VF_FR [13] (Page4-30)
VF_VY_OT [13] CN210
VF_OUT [3] CN206
D51 DAN222
R54 12K
R53 12K
R51 15K
R52 22K
C52 0.01
C51 22/6.3
L51 47μ
IC51 MM1117XF
C53 1/50
R55 OPEN
C4916 OPEN
C4915 OPEN
R4904 0
IC4904 OPEN
Vin GND Cont Noise Vout
C4914 OPEN
R47 0Ω
D2191 OPEN
R2197 OPEN
R2191 100
R2192 OPEN
B2191 OPEN
Q2191 OPEN
Q2192 OPEN
C2191 OPEN
C2192 OPEN
R2193 OPEN
L2191 1μ
R2194 OPEN
L2192 OPEN
R2195 OPEN
L2193 1μ
R2196 OPEN
L2194 OPEN
C2193 0.001
C2194 OPEN
R41 68
R42 OPEN
D42 OPEN
D41 MA8068
C41 330/4
C42 OPEN
R43 0Ω
R44 0Ω
D44 OPEN
D43 OPEN
R45 75
R46 75
C43 330/4
C44 0.1μ
D46 OPEN
D45 OPEN
Y
C
02 PROCESS (JACK)
SW41 OFF OPEN AUTO ON
LAMP_SW
A_OUT(L)
A_OUT(R)
DC_OUT
V_OUT
J42 PEMC1188
GND TX RX
J41 PEMC1203
J_IP
J43 QND0001-001
S_OUT

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4
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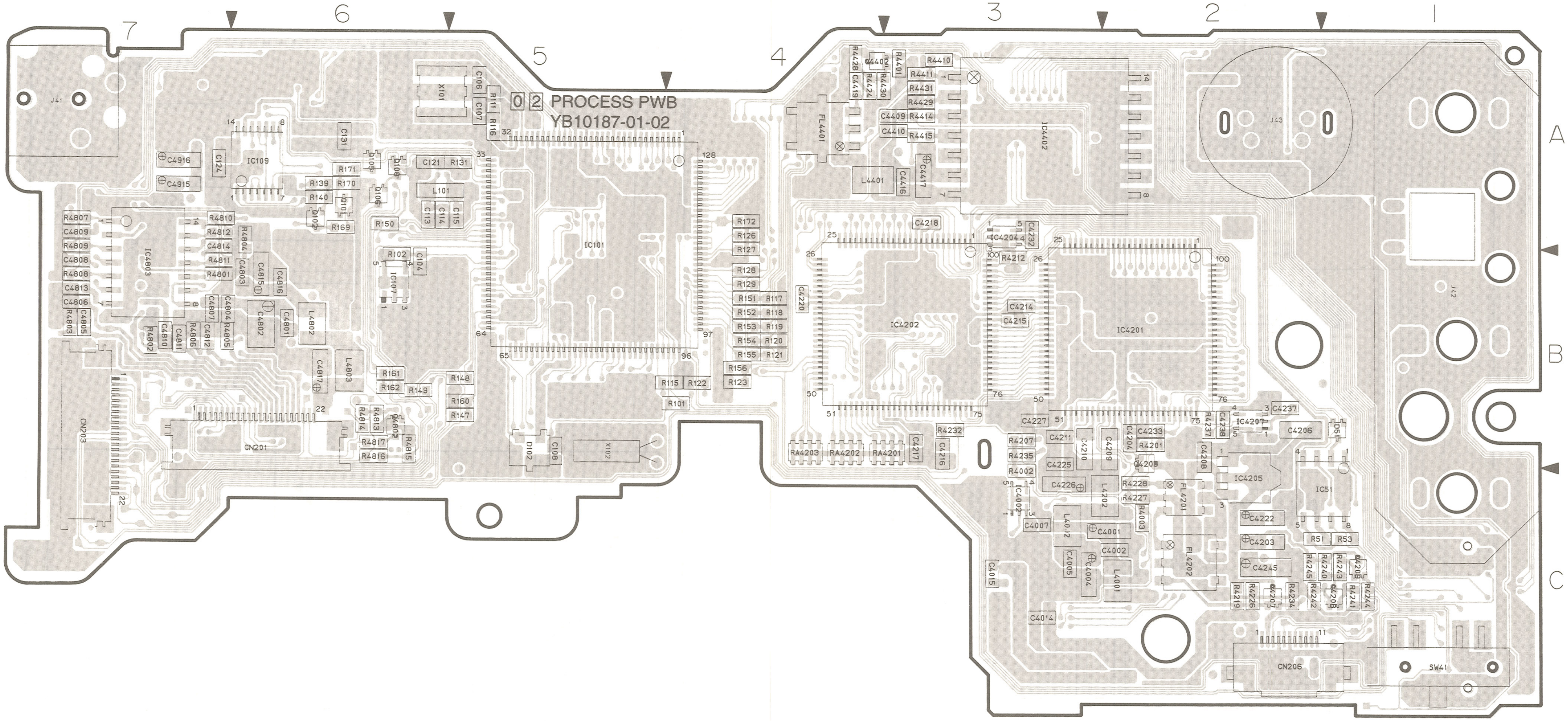
2
1
A
B
C
D
E
F
G
H

4.14 PROCESS CIRCUIT BOARD

FOIL SIDE (B)



7
6
5
4
3
2
1
A
B
C
02 PROCESS PWB
YB10187-01-02
J41
J43
J42
IC101
IC109
IC107
IC4803
IC4202
IC4201
IC4402
IC4205
IC51
FL4401
FL4201
FL4202
L4401
L101
L4802
L4803
L4202
L4012
L4001
X101
X102
D102
CN201
CN203
CN206
SW41
C4916
C4915
C124
C131
C106
C107
C108
C121
C113
C114
C115
C104
R111
R116
R131
R171
R139
R170
R140
R169
R150
R102
R161
R162
R149
R148
R160
R147
R172
R126
R127
R128
R129
R151
R117
R152
R118
R153
R119
R154
R120
R155
R121
R156
R123
R115
R122
R101
R4807
C4809
R4809
C4808
R4808
C4813
C4806
R4803
C4805
R4802
C4810
C4811
R4806
C4812
R4805
C4804
C4807
C4802
C4801
C4803
C4815
C4816
C4817
C4814
R4810
R4812
R4804
R4811
R4801
R4813
R4814
R4817
R4816
R4815
C4802
R4428
C4402
R4401
R4410
R4411
R4431
R4429
R4414
R4415
C4409
C4410
C4419
R4426
R4430
C4416
C4417
C4218
C4204
C4232
R4212
C4220
C4214
C4215
C4227
R4232
RA4203
RA4202
RA4201
C4217
C4216
R4207
R4235
R4002
C4211
C4210
C4209
C4204
C4233
R4201
C4205
C4225
C4226
R4228
R4227
R4003
C4002
C4007
C4001
C4002
C4005
C4004
C4015
C4014
R4237
C4238
C4208
C4207
C4237
C4206
D51
C4222
C4203
C4245
R51
R53
R4245
R4240
R4243
C4209
R4219
R4226
C4201
R4234
R4242
C4208
R4241
R4244

COMPONENT PARTS LOCATION GUIDE (PROCESS PWB)

REF.No.	LOCATION		
CAPACITOR			
C41	A	C	1A
C42	A	C	1A
C43	A	C	2A
C44	A	C	1A
C51	A	C	1C
C52	A	C	1C
C53	A	C	2B
C101	A	C	7A
C102	A	C	6B
C103	A	C	5C
C104	B	C	6B
C105	A	C	5B
C106	B	C	5A
C107	B	C	5A
C108	B	C	5B
C109	A	C	4A
C110	A	C	4A
C111	A	C	5A
C112	A	C	5A
C113	B	C	6A
C114	B	C	6A
C115	B	C	5A
C116	A	C	5B
C117	A	C	5B
C118	A	C	5B
C119	A	C	5B
C120	A	C	5B
C121	B	C	6A
C122	A	C	5A
C123	A	C	5B
C124	B	C	7A
C125	A	C	5B
C126	A	C	5B
C127	A	C	5B
C128	A	C	5B
C129	A	C	5C
C130	A	C	6B
C131	B	C	6A
C2191	A	C	1B
C2192	A	C	1B
C2193	A	C	1B
C2194	A	C	1B
C4001	B	C	2C
C4002	B	C	2C
C4003	A	C	2C
C4004	B	C	3C
C4005	B	C	3C
C4006	A	C	3C
C4007	B	C	3C
C4008	A	C	3C
C4009	A	C	2C
C4010	A	C	2C
C4011	A	C	3C
C4012	A	C	3C
C4013	A	C	2C
C4014	B	C	3C
C4015	B	C	3C
C4201	A	C	2B
C4202	A	C	2B
C4203	B	C	2C
C4204	B	C	2B
C4205	A	C	2C
C4206	B	C	2B
C4207	A	C	2C
C4208	B	C	2B
C4209	B	C	2B
C4210	B	C	3B
C4211	B	C	3B
C4212	A	C	2B
C4213	A	C	2C
C4214	B	C	3B
C4215	B	C	3B
C4216	B	C	3B
C4217	B	C	3B
C4218	B	C	3A
C4219	A	C	2C
C4220	B	C	4B
C4221	A	C	3B
C4222	B	C	2C
C4223	A	C	4B
C4224	A	C	4B
C4225	B	C	3C
C4226	B	C	3C
C4227	B	C	3B
C4228	A	C	3B
C4230	A	C	2B
C4231	A	C	2B
C4232	B	C	3A
C4233	B	C	2B
C4234	A	C	2C
C4236	A	C	2C
C4237	B	C	2B
C4238	B	C	2B
C4239	A	C	2C
C4240	A	C	1C
C4241	A	C	2C
C4242	A	C	2C
C4243	A	C	1C
C4244	A	C	2C
C4245	B	C	2C
C4401	A	C	3A
C4402	A	C	3A
C4403	A	C	3A
C4404	A	C	3A
C4405	A	C	3A
C4406	A	C	3A
C4407	A	C	3A
C4408	A	C	3A
C4409	B	C	3A
C4410	B	C	3A
C4411	A	C	3A
C4412	A	C	3A
C4413	A	C	3A
C4414	A	C	4A
C4415	A	C	3A
C4416	B	C	3A
C4417	B	C	3A
C4418	A	C	3A
C4419	B	C	4A
C4420	A	C	2A
C4421	A	C	3A
C4422	A	C	3A
C4801	B	C	6B
C4802	B	C	6B
C4803	B	C	6B
C4804	B	C	6B
C4805	B	C	7B
C4806	B	C	7B
C4807	B	C	7B
C4808	B	C	7B
C4809	B	C	7A
C4810	B	C	7B
C4811	B	C	7B
C4812	B	C	7B
C4813	B	C	7B
C4814	B	C	7B
C4815	B	C	6B
C4816	B	C	6B
C4817	B	C	6B
C4901	A	C	6B
C4902	A	C	6B
C4903	A	C	7B
C4904	A	C	7B
C4905	A	C	7C
C4906	A	C	6B
C4907	A	C	7C
C4908	A	C	6B
C4909	A	C	7B
C4910	A	C	6B
C4911	A	C	6B
C4912	A	C	7B
C4913	A	C	7B
C4914	A	C	7A
C4915	B	C	7A
C4916	B	C	7A
CONNECTOR			
CN201	B	C	7B
CN202	A	C	3C
CN203	B	C	7B
CN204	A	C	1C
CN206	B	C	2C
CN207	A	C	1D
CN210	A	C	3A
CN211	A	C	6A
DIODE			
D41	A	C	2A
D42	A	C	2A
D43	A	C	7A
D44	A	C	7A
D45	A	C	1A
D46	A	C	2A
D51	B	C	1B
D101	A	C	5B
D102	B	C	5B
D2191	A	C	2B
IC			
IC51	B	C	1C
IC101	B	C	5B
IC102	A	C	5A
IC103	A	C	5B
IC104	A	C	5A
IC105	A	C	5B
IC106	A	C	6A
IC107	B	C	6B
IC108	A	C	5A
IC109	B	C	6A
IC110	A	C	6A
IC111	A	C	6B
IC4001	A	C	2C
IC4002	B	C	3C
IC4201	B	C	2B
IC4202	B	C	3B
IC4203	A	C	3B
IC4204	B	C	3A
IC4205	B	C	2C
IC4206	A	C	2C
IC4207	B	C	2B
IC4208	A	C	2C
IC4401	A	C	3A
IC4402	B	C	3A
IC4801	A	C	7B
IC4802	A	C	7B
IC4803	B	C	7B
IC4901	A	C	6B
IC4902	A	C	7B
IC4903	A	C	6B
IC4904	A	C	7A
COIL			
L51	A	C	2C
L101	B	C	6A
L102	A	C	6B
L2191	A	C	1B
L2192	A	C	1B
L2193	A	C	1B
L2194	A	C	1B
L4001	B	C	2C
L4002	B	C	3C
L4201	A	C	2C
L4202	B	C	2C
L4203	A	C	4B
L4204	A	C	2B
L4401	B	C	4A
L4801	A	C	6B
L4802	B	C	6B
L4803	B	C	6B
L4901	A	C	6B
TRANSISTOR			
Q101	B	C	6A
Q102	B	C	6A
Q103	A	C	6B
Q104	A	C	6B
Q105	B	C	6A
Q106	B	C	6A
Q107	A	C	5A
Q108	B	C	6A
Q2191	A	C	2B
Q2192	A	C	2B
Q4001	A	C	3C
Q4201	A	C	2B
Q4202	A	C	2B
Q4203	A	C	2B
Q4204	A	C	2B
Q4205	B	C	2B
Q4207	B	C	2C
Q4208	B	C	1C
Q4209	B	C	1C
Q4401	A	C	2A
Q4402	B	C	4A
Q4801	A	C	7A
Q4802	B	C	6B
Q4901	A	C	7B
Q4902	A	C	6B
Q4903	A	C	6B
Q4904	A	C	6B
Q4905	A	C	7B
Q4906	A	C	7B
RESISTOR			
R41	A	C	2A
R42	A	C	2A
R43	A	C	7A
R44	A	C	7A
R45	A	C	2A
R46	A	C	1A
R47	A	C	1A
R51	B	C	2C
R52	A	C	1C
R53	B	C	1C
R54	A	C	1C
R55	A	C	1C
R101	B	C	4B
R102	B	C	6B
R103	A	C	6B
R104	A	C	5B
R105	A	C	5B
R106	A	C	4A
R107	A	C	4A
R108	A	C	4B
R109	A	C	5B
R110	A	C	5B
R111	B	C	5A
R113	A	C	5B
R114	A	C	6A
R115	B	C	4B
R116	B	C	5A
R117	B	C	4B
R118	B	C	4B

REF.No.	LOCATION		
R119	B	C	4B
R120	B	C	4B
R121	B	C	4B
R122	B	C	4B
R123	B	C	4B
R124	A	C	5B
R125	A	C	5B
R126	B	C	4A
R127	B	C	4B
R128	B	C	4B
R129	B	C	4B
R130	A	C	6B
R131	B	C	5A
R132	A	C	6A
R133	A	C	5A
R136	A	C	5A
R137	A	C	5B
R138	A	C	5B
R139	B	C	6A
R140	B	C	6A
R141	A	C	5B
R142	A	C	5A
R143	A	C	5A
R144	A	C	5A
R145	A	C	5A
R146	A	C	5A
R147	B	C	5B
R148	B	C	5B
R149	B	C	6B
R150	B	C	6A
R151	B	C	4B
R152	B	C	4B
R153	B	C	4B
R154	B	C	4B
R155	B	C	4B
R156	B	C	4B
R157	A	C	5B
R158	A	C	5B
R159	A	C	5B
R160	B	C	5B
R161	B	C	6B
R162	B	C	6B
R163	A	C	5B
R164	A	C	6B
R165	A	C	6B
R166	A	C	5B
R167	A	C	5B
R168	A	C	5A
R169	B	C	6A
R170	B	C	6A
R171	B	C	6A
R172	B	C	4A
R175	A	C	5B
R176	A	C	5B
R2191	A	C	2B
R2192	A	C	2B
R2193	A	C	1B
R2194	A	C	1B
R2195	A	C	1B
R2196	A	C	1B
R2197	A	C	2B
R4001	A	C	3C
R4002	B	C	3C
R4003	B	C	2C
R4004	A	C	2C
R4008	A	C	3C
R4009	A	C	2C
R4201	B	C	2B
R4202	A	C	2B
R4203	A	C	2B
R4204	A	C	2B
R4205	A	C	2B
R4206	A	C	2B
R4207	B	C	3B
R4209	A	C	3B
R4210	A	C	3B
R4211	A	C	2B
R4212	B	C	3B
R4214	A	C	2B
R4215	A	C	2B
R4216	A	C	2B
R4217	A	C	2C
R4218	A	C	2C
R4219	B	C	2C
R4221	A	C	2C
R4222	A	C	2C
R4223	A	C	2C
R4224	A	C	2C
R4226	B	C	2C
R4227	B	C	2C
R4228	B	C	2C
R4232	B	C	3B
R4234	B	C	2C
R4235	B	C	3B
R4237	B	C	2B
R4238	A	C	1C
R4239	A	C	1C
R4240	B	C	1C
R4241	B	C	1C
R4242	B	C	2C
R4243	B	C	1C
R4244	B	C	1C
R4245	B	C	2C
R4401	B	C	3A
R4402	A	C	3A
R4403	A	C	3A
R4404	A	C	3A
R4405	A	C	3A
R4406	A	C	3A
R4407	A	C	4A
R4408	A	C	3A
R4409	A	C	4A
R4410	B	C	3A
R4411	B	C	3A
R4413	A	C	3A
R4414	B	C	3A
R4415	B	C	3A
R4417	A	C	3A
R4418	A	C	3A
R4419	A	C	3A
R4420	A	C	3A
R4421	A	C	3A
R4422	A	C	3A
R4423	A	C	2A
R4424	B	C	4A
R4425	A	C	2A
R4426	A	C	2A
R4427	A	C	2A
R4428	B	C	4A
R4429	B	C	3A
R4430	B	C	4A
R4431	B	C	3A
R4801	B	C	7B
R4802	B	C	7B
R4803	B	C	7B
R4804	B	C	6A
R4805	B	C	7B
R4806	B	C	7B
R4807	B	C	7A
R4808	B	C	7B
R4809	B	C	7B
R4810	B	C	7A
R4811	B	C	7B
R4812	B	C	7A
R4813	B	C	6B
R4814	B	C	6B
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R4816	B	C	6B
R4817	B	C	6B
R4901	A	C	7B
R4902	A	C	7B
R4903	A	C	7B
R4904	A	C	7A
R4905	A	C	6B
R4906	A	C	7C
R4907	A	C	7C
R4908	A	C	7C
R4909	A	C	7C
R4910	A	C	7C
R4911	A	C	7B
R4912	A	C	6C
R4913	A	C	6C
R4914	A	C	7C
R4915	A	C	7C
R4916	A	C	7C
R4917	A	C	7C
R4918	A	C	7C
R4919	A	C	7C
R4920	A	C	6C
R4921	A	C	6C
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R4925	A	C	7C
R4926	A	C	6C
R4927	A	C	7C
R4928	A	C	7C
R4929	A	C	7B
R4930	A	C	6B
R4931	A	C	7C
R4932	A	C	6B
R4933	A	C	6B
RA4001	A	C	2C
RA4002	A	C	3C
RA4201	B	C	3B
RA4202	B	C	4B
RA4203	B	C	4B
RA4204	A	C	3B
RA4205	A	C	4B
RA4206	A	C	4B
RA4207	A	C	4B
RA4208	A	C	4B
RA4209	A	C	4B

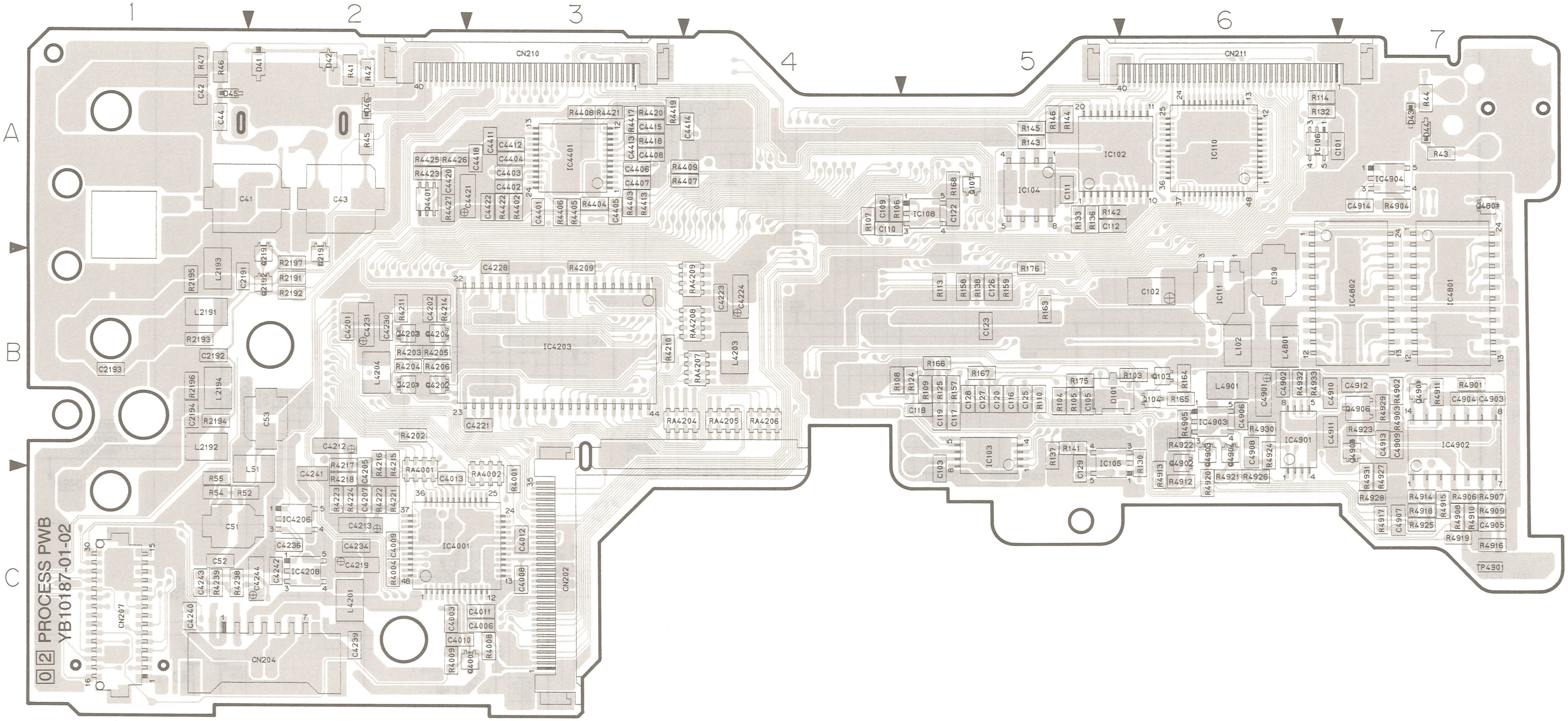
TEST POINT

REF.No.	LOCATION		
TP4901	A	C	7C

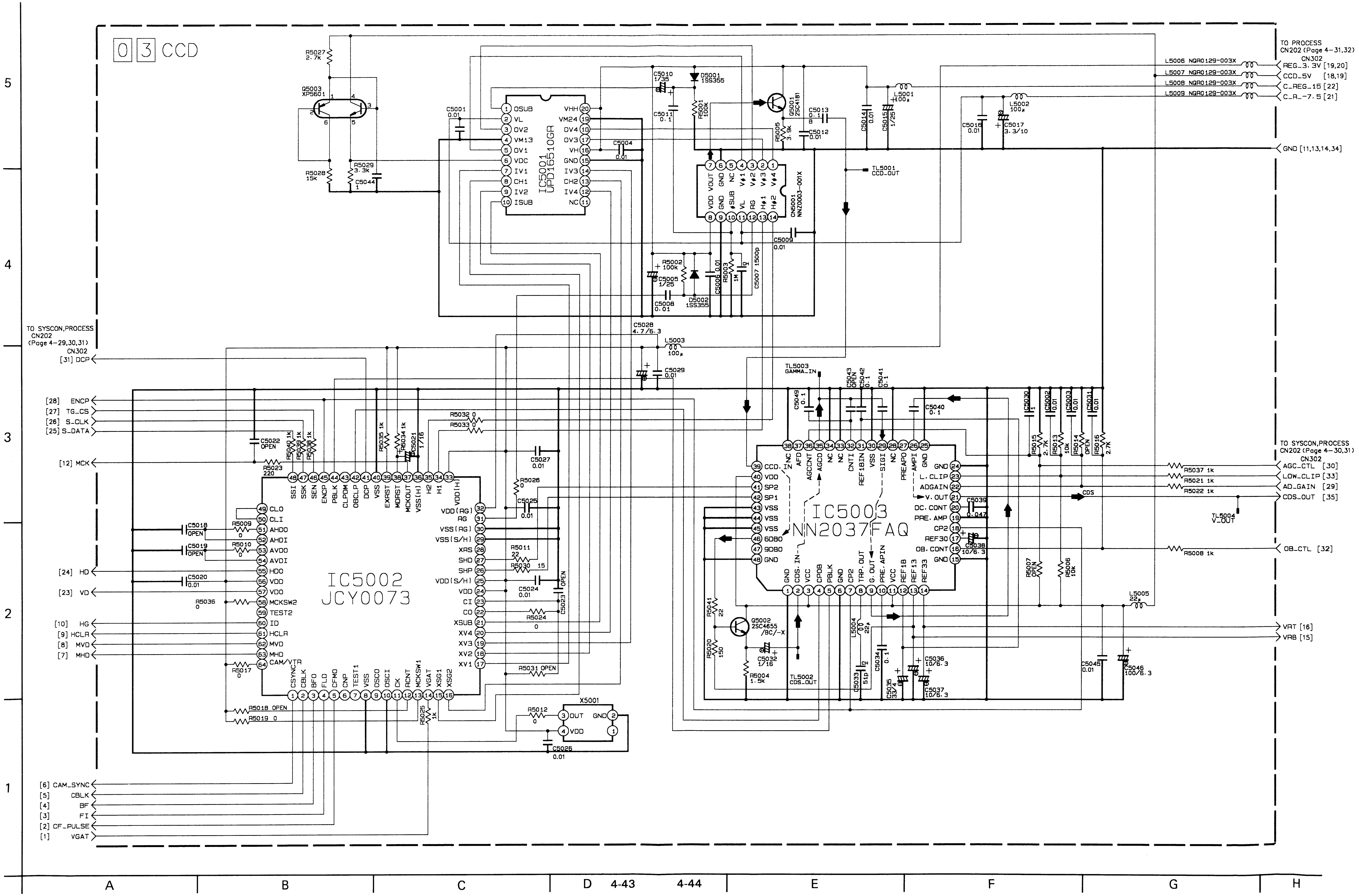
OTHER

REF.No.	LOCATION		
FL4201	B	C	2C
FL4202	B	C	2C
FL4401	B	C	4A
J41	A	D	7A
J42	A	D	1A
J43	A	D	2A
SW41	B	C	1C
X101	B	C	6A
X102	A	D	5C

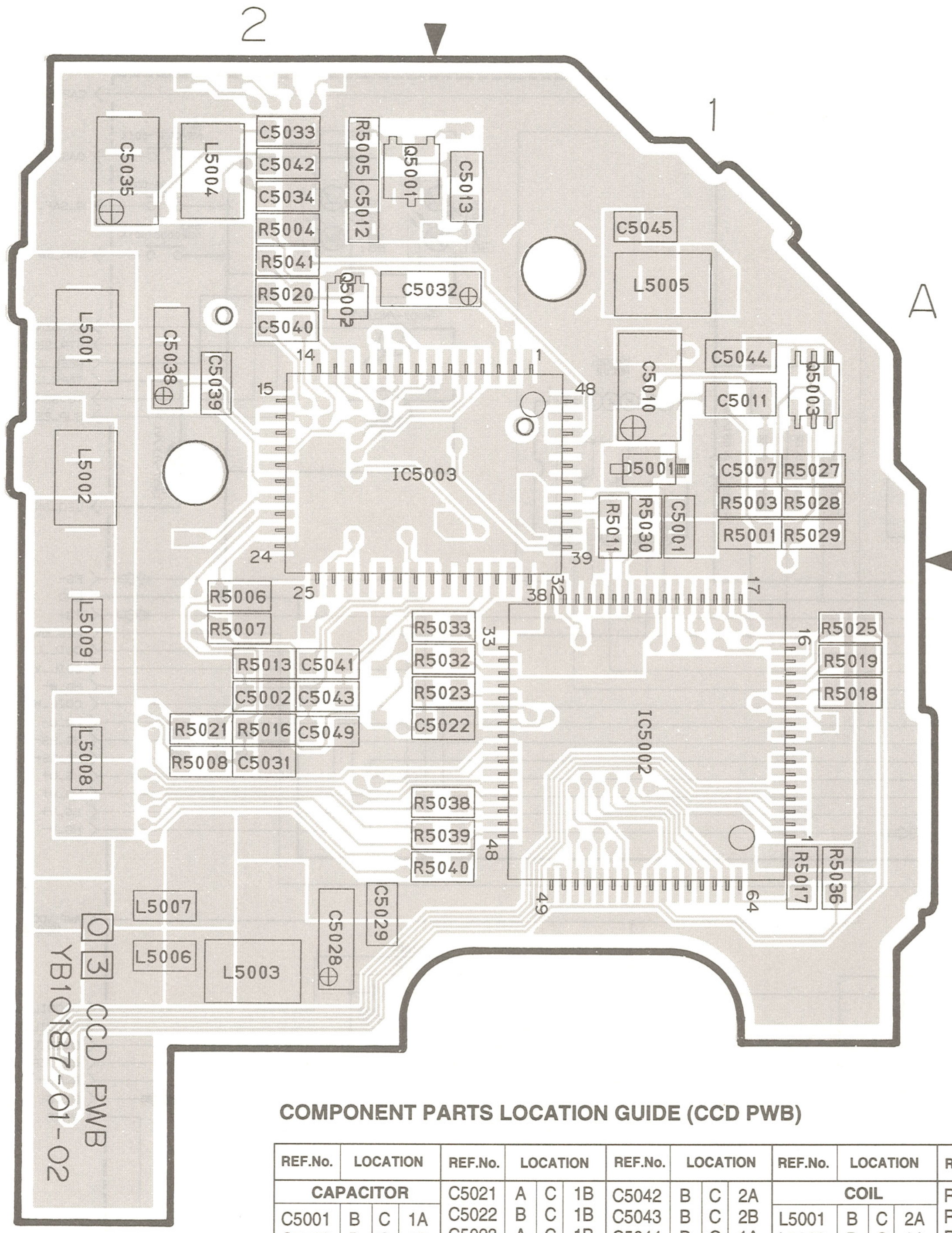
COMPONENT SIDE (A)

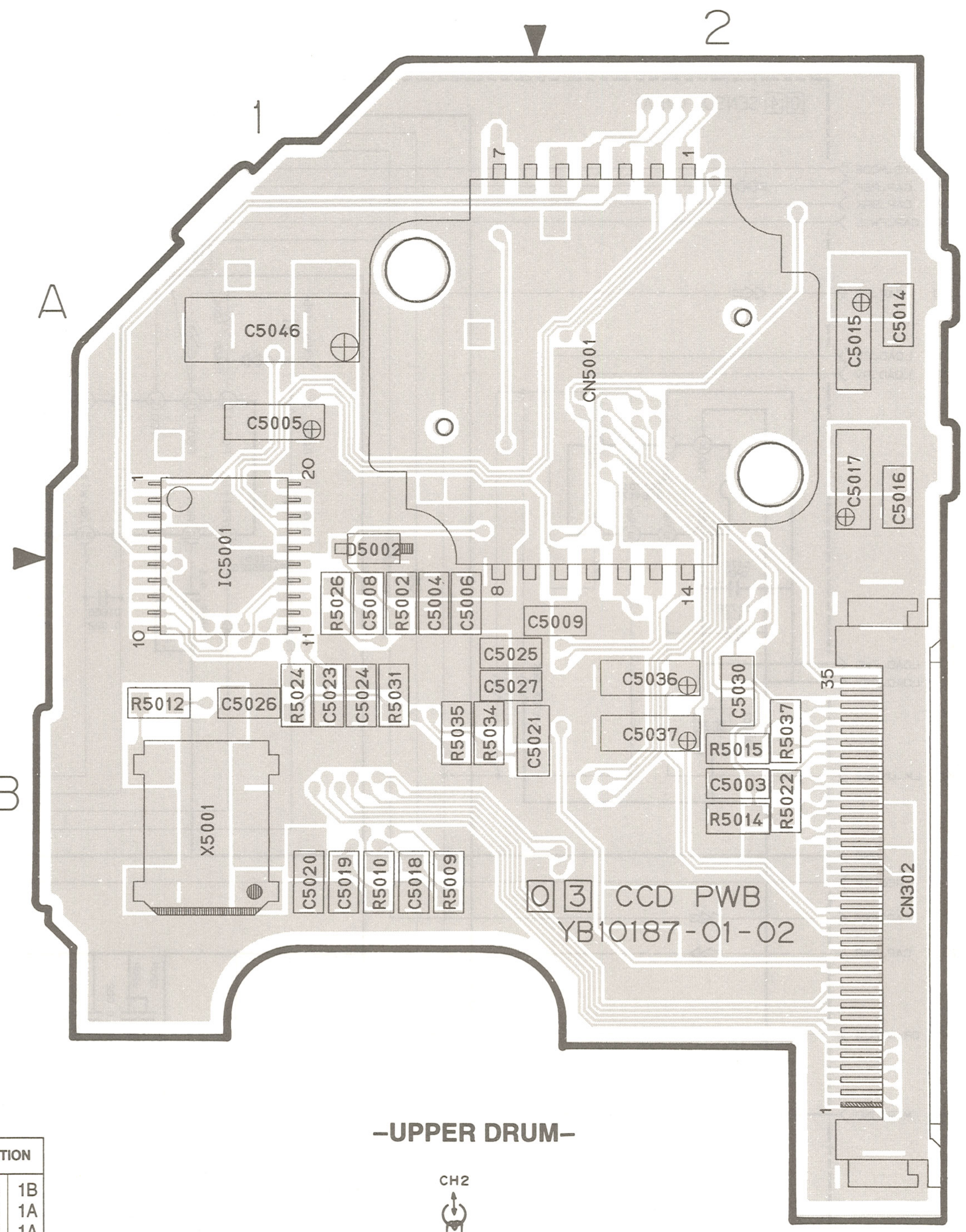

1
2
3
4
5
6
7
A
B
C
CN210
CN211
CN202
CN204
CN207
IC4401
IC4203
IC4001
IC4206
IC4208
IC102
IC110
IC104
IC108
IC103
IC105
IC106
IC111
IC4802
IC4801
IC4901
IC4902
IC4903
IC4904
C41
C43
C51
C53
L51
L2191
L2192
L2193
L2194
L4201
L4203
L4204
L4801
L4901
L102
C102
C123
C130
RA4001
RA4002
RA4204
RA4205
RA4206
RA4207
RA4208
RA4209
TP4901
0 2 PROCESS PWB
YB10187-01-02

4.15 CCD SCHEMATIC DIAGRAM


03 CCD
TO PROCESS CN202 (Page 4-31,32) CN302
L5006 NQR0129-003X REG_3.3V [19,20]
L5007 NQR0129-003X CCD_5V [18,19]
L5008 NQR0129-003X C_REG_15 [22]
L5009 NQR0129-003X C_R_-7.5 [21]
GND [11,13,14,34]
TO SYSCON,PROCESS CN202 (Page 4-29,30,31) CN302
[31] DCP
[28] ENCP
[27] TG_CS
[26] S_CLK
[25] S_DATA
[12] MCK
[24] HD
[23] VD
[10] HG
[9] HCLR
[8] MVD
[7] MHD
[6] CAM_SYNC
[5] CBLK
[4] BF
[3] FI
[2] CF_PULSE
[1] VGAT
TO SYSCON,PROCESS CN202 (Page 4-30,31) CN302
AGC_CTL [30]
LOW_CLIP [33]
AD_GAIN [29]
CDS_OUT [35]
OB_CTL [32]
VRT [16]
VRB [15]
IC5001 UPD16510GR
IC5002 JCY0073
IC5003 NN2037FAQ
CN5001 NNZ0003-001X
Q5001 2SC4181
Q5002 2SC4655 /BC/-X
Q5003 XP5601
D5001 1SS355
D5002 1SS355
X5001
TL5001 CCD_OUT
TL5002 CDS_OUT
TL5003 GAMMA_IN
TL5004 V_OUT
L5001 100μ
L5002 100μ
L5003 100μ
L5004 22μ
L5005 22μ
R5037 1k
R5021 1k
R5022 1k
R5008 1k
CDS
A
B
C
D
E
F
G
H
1
2
3
4
5

4.16 CCD AND UPPER DRUM CIRCUIT BOARDS

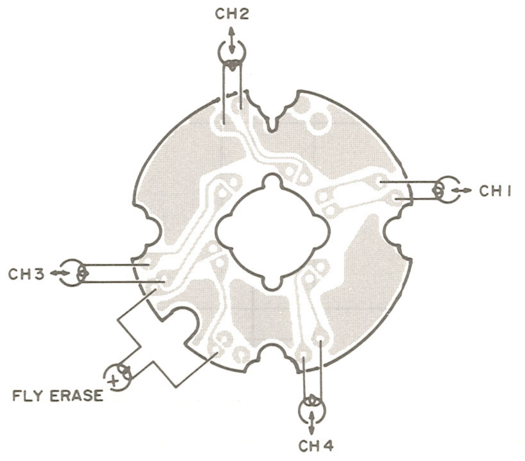

2
1
A
B
C5035
L5004
C5033
C5042
C5034
R5004
R5041
R5020
C5040
R5005
C5012
Q5001
C5013
Q5002
C5032
C5045
L5005
L5001
C5038
C5039
C5044
C5010
C5011
Q5003
D5001
C5007
R5027
R5003
R5028
R5001
R5029
R5011
R5030
C5001
IC5003
L5002
L5009
R5006
R5007
R5013
C5041
C5002
C5043
R5021
R5016
C5049
R5008
C5031
L5008
R5033
R5032
R5023
C5022
IC5002
R5025
R5019
R5018
R5038
R5039
R5040
R5017
R5036
L5007
L5006
L5003
C5028
C5029
03 CCD PWB
YB10187-01-02


1
2
A
B
C5046
C5005
CN5001
C5015
C5014
C5017
C5016
IC5001
D5002
R5026
C5008
R5002
C5004
C5006
C5009
C5025
C5027
R5012
C5026
R5024
C5023
C5024
R5031
C5036
C5030
R5035
R5034
C5021
C5037
R5015
R5037
C5003
R5022
R5014
X5001
C5020
C5019
R5010
C5018
R5009
CN302
03 CCD PWB
YB10187-01-02

COMPONENT PARTS LOCATION GUIDE (CCD PWB)

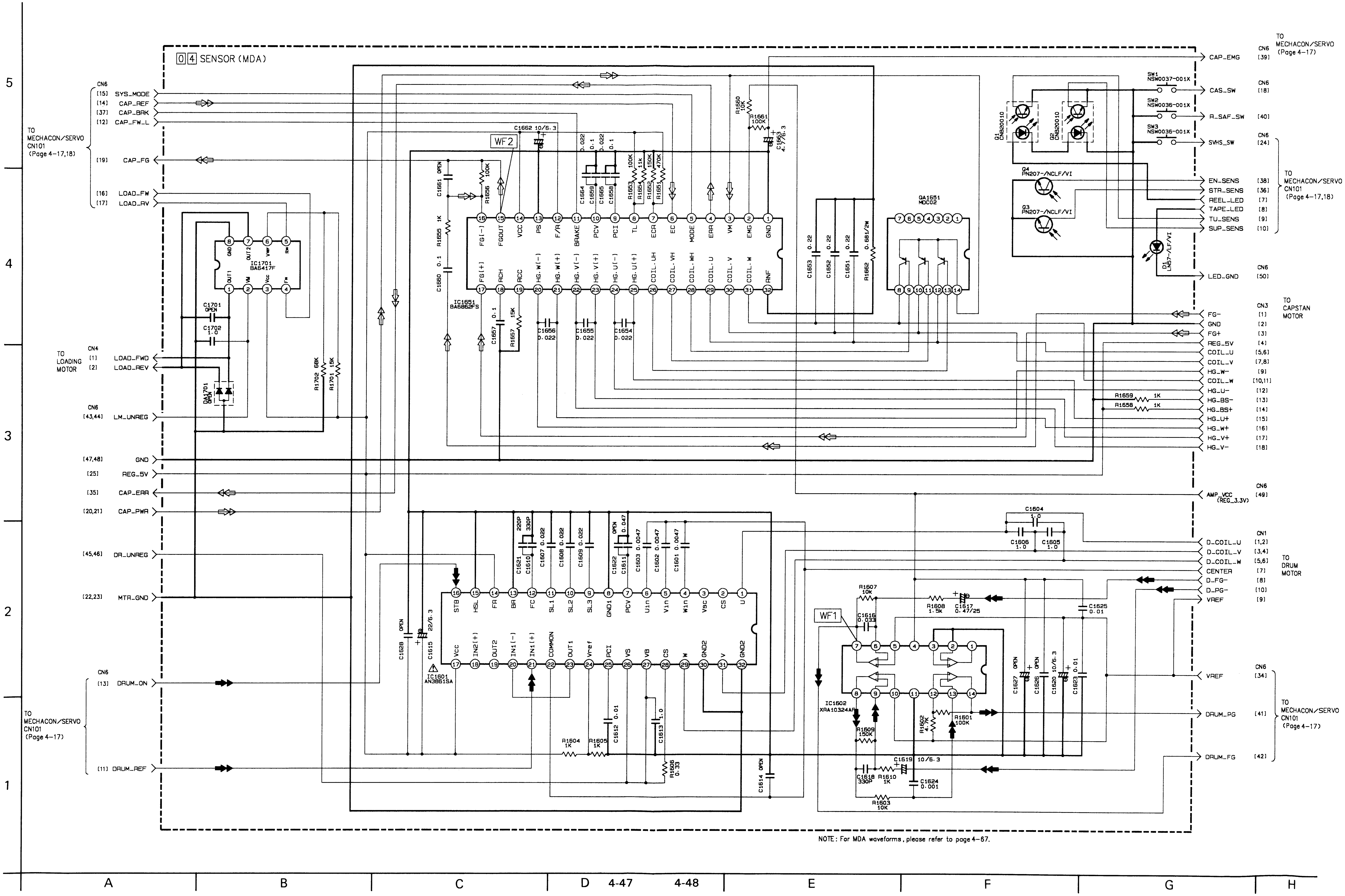
REF.No.	LOCATION		
CAPACITOR			
C5001	B	C	1A
C5002	B	C	2B
C5003	A	C	2B
C5004	A	C	1B
C5005	A	C	1A
C5006	A	C	1B
C5007	B	C	1A
C5008	A	C	1B
C5009	A	C	2B
C5010	B	C	1A
C5011	B	C	1A
C5012	B	C	2A
C5013	B	C	1A
C5014	A	C	2A
C5015	A	C	2A
C5016	A	C	2A
C5017	A	C	2A
C5018	A	C	1B
C5019	A	C	1B
C5020	A	C	1B
C5021	A	C	1B
C5022	B	C	1B
C5023	A	C	1B
C5024	A	C	1B
C5025	A	C	1B
C5026	A	C	1B
C5027	A	C	1B
C5028	B	C	2B
C5029	B	C	2B
C5030	A	C	2B
C5031	B	C	2B
C5032	B	C	2A
C5033	B	C	2A
C5034	B	C	2A
C5035	B	C	2A
C5036	A	C	2B
C5037	A	C	2B
C5038	B	C	2A
C5039	B	C	2A
C5040	B	C	2A
C5041	B	C	2B
C5042	B	C	2A
C5043	B	C	2B
C5044	B	C	1A
C5045	B	C	1A
C5046	A	C	1A
C5049	B	C	2B
CONNECTOR			
CN302	A	C	2B
CN5001	A	C	2A
DIODE			
D5001	B	C	1A
D5002	A	C	1A
IC			
IC5001	A	C	1A
IC5002	B	C	1B
IC5003	B	C	2A
COIL			
L5001	B	C	2A
L5002	B	C	2A
L5003	B	C	2B
L5004	B	C	2A
L5005	B	C	1A
L5006	B	C	2B
L5007	B	C	2B
L5008	B	C	2B
L5009	B	C	2B
TRANSISTOR			
Q5001	B	C	2A
Q5002	B	C	2A
Q5003	B	C	1A
RESISTOR			
R5001	B	C	1A
R5002	A	C	1B
R5003	B	C	1A
R5004	B	C	2A
R5005	B	C	2A
R5006	B	C	2B
R5007	B	C	2B
R5008	B	C	2B
R5009	A	C	1B
R5010	A	C	1B
R5011	B	C	1A
R5012	A	C	1B
R5013	B	C	2B
R5014	A	C	2B
R5015	A	C	2B
R5016	B	C	2B
R5017	B	C	1B
R5018	B	C	1B
R5019	B	C	1B
R5020	B	C	2A
R5021	B	C	2B
R5022	A	C	2B
R5023	B	C	1B
R5024	A	C	1B
R5025	B	C	1B
R5026	A	C	1B
R5027	B	C	1A
R5028	B	C	1A
R5029	B	C	1A
R5030	B	C	1A
R5031	A	C	1B
R5032	B	C	1B
R5033	B	C	1B
R5034	A	C	1B
R5035	A	C	1B
R5036	B	C	1B
R5037	A	C	2B
R5038	B	C	1B
R5039	B	C	1B
R5040	B	C	1B
R5041	B	C	2A
OTHER			
X5001	A	C	1B

-UPPER DRUM-


CH2
CH1
CH3
FLY ERASE
CH4

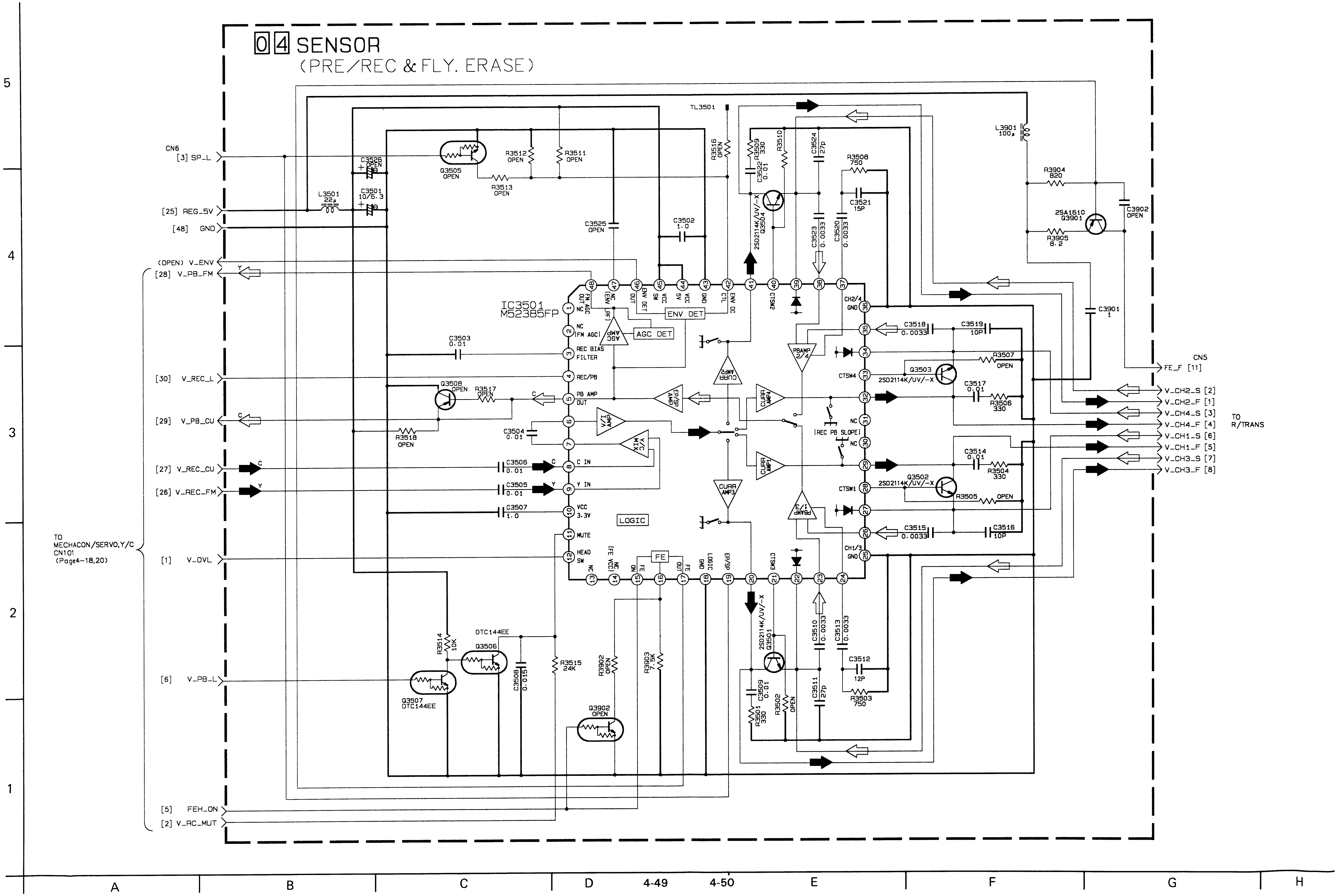
40 UPPER DRUM PWB

4.17 MDA SCHEMATIC DIAGRAM


04 SENSOR (MDA)
TO MECHACON/SERVO CN101 (Page 4-17,18)
CN6
[15] SYS_MODE
[14] CAP_REF
[37] CAP_BRK
[12] CAP_FW_L
[19] CAP_FG
[16] LOAD_FW
[17] LOAD_RV
TO LOADING MOTOR
CN4
[1] LOAD_FWD
[2] LOAD_REV
[43,44] LM_UNREG
[47,48] GND
[25] REG_5V
[35] CAP_ERR
[20,21] CAP_PWR
[45,46] DR_UNREG
[22,23] MTR_GND
TO MECHACON/SERVO CN101 (Page 4-17)
[13] DRUM_ON
[11] DRUM_REF
IC1701 BA6417F
QA1701
C1701 OPEN
C1702 1.0
R1702 68K
R1701 15K
IC1651 BA6862FS
C1662 10/6.3
WF2
C1661 OPEN
R1656 100K
R1655 1K
C1660 0.1
C1657 0.1
R1657 15K
C1656 0.022
C1655 0.022
C1654 0.022
C1664 0.022
C1659 0.1
C1665 0.022
C1658 0.1
R1653 100K
R1654 1K
R1652 150K
R1651 470K
R1660 10K
R1661 100K
C1663 4.7/6.3
FG(-) FGOUT VCC PS F/R BRAKE PCV PCI TL ECR EC MODE ERR VH EMG GND
FG(+) RCH RCC HG.W(-) HG.W(+) HG.V(-) HG.V(+) HG.U(-) HG.U(+) COIL.UH COIL.VH COIL.WH COIL.U COIL.V COIL.W RNF
C1653 0.22
C1652 0.22
C1651 0.22
R1662 0.681/2W
QA1651 MDC02
SW1 NSW0037-001X
SW2 NSW0036-001X
SW3 NSW0036-001X
Q1 CNB20010
Q2 CNB20010
Q4 PN207-/NCLF/VI
Q3 PN207-/NCLF/VI
D1 LN57-/LF/VI
TO MECHACON/SERVO CN6 (Page 4-17)
CAP_EMG [39]
CAS_SW [18]
R_SAF_SW [40]
SVHS_SW [24]
TO MECHACON/SERVO CN101 (Page 4-17,18)
EN_SENS [38]
STR_SENS [36]
REEL_LED [7]
TAPE_LED [8]
TU_SENS [9]
SUP_SENS [10]
LED_GND [50]
TO CAPSTAN MOTOR
CN3
FG- [1]
GND [2]
FG+ [3]
REG_5V [4]
COIL_U [5,6]
COIL_V [7,8]
HG_W- [9]
COIL_W [10,11]
HG_U- [12]
HG_BS- [13]
HG_BS+ [14]
HG_U+ [15]
HG_W+ [16]
HG_V+ [17]
HG_V- [18]
R1659 1K
R1658 1K
AMP_VCC (REG_3.3V) [49]
C1604 1.0
C1606 1.0
C1605 1.0
TO DRUM MOTOR
CN1
D_COIL_U [1,2]
D_COIL_V [3,4]
D_COIL_W [5,6]
CENTER [7]
D_FG- [8]
D_PG- [10]
VREF [9]
IC1601 AN3861SA
STB HSL FR BR FC SL1 SL2 SL3 GND1 PCV Uin Vin Win Vsc CS U
Vcc IN2(+) OUT2 IN1(-) IN1(+) COMMON OUT1 Vref PCI VS VB CS W GND2 V GND2
C1621 220P
C1610 330P
C1607 0.022
C1608 0.022
C1609 0.022
C1622 OPEN
C1611 0.047
C1603 0.0047
C1602 0.0047
C1601 0.0047
C1628 OPEN
C1615 22/6.3
C1612 0.01
C1613 1.0
R1604 1K
R1605 1K
R1606 0.33
C1614 OPEN
WF1
IC1602 XRA10324AF
R1607 10K
C1616 0.033
R1608 1.5K
C1617 0.47/25
C1625 0.01
C1627 OPEN
C1626 OPEN
C1620 10/6.3
C1623 0.01
R1602 4.7K
R1601 100K
R1609 150K
C1619 10/6.3
C1618 330P
R1610 1K
C1624 0.001
R1603 10K
VREF [34]
TO MECHACON/SERVO CN101 (Page 4-17)
DRUM_PG [41]
DRUM_FG [42]
1
2
3
4
5
A
B
C
D
E
F
G
H

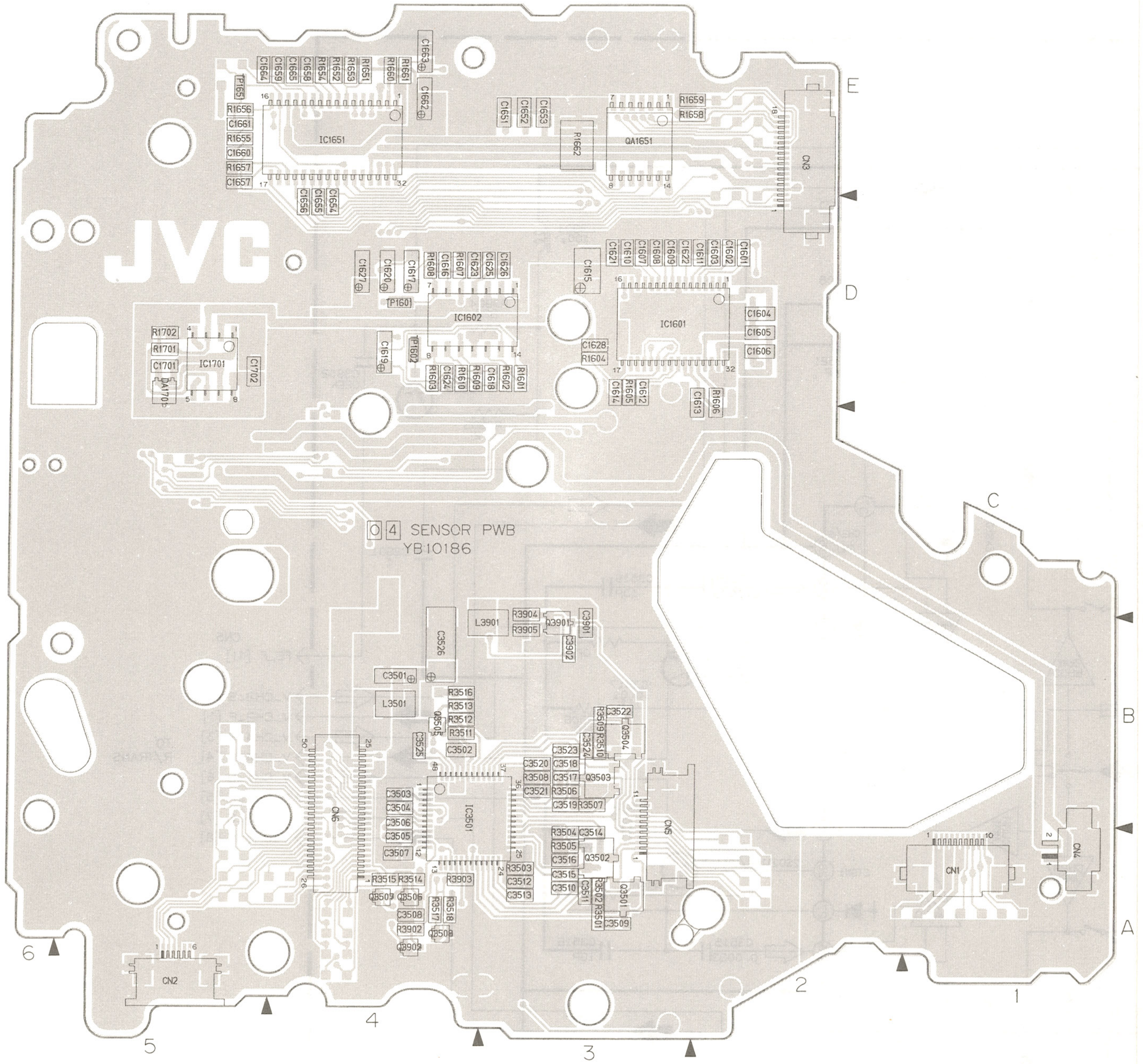
NOTE: For MDA waveforms, please refer to page 4-67.

4.18 PRE/REC AND FLYING ERASE SCHEMATIC DIAGRAM

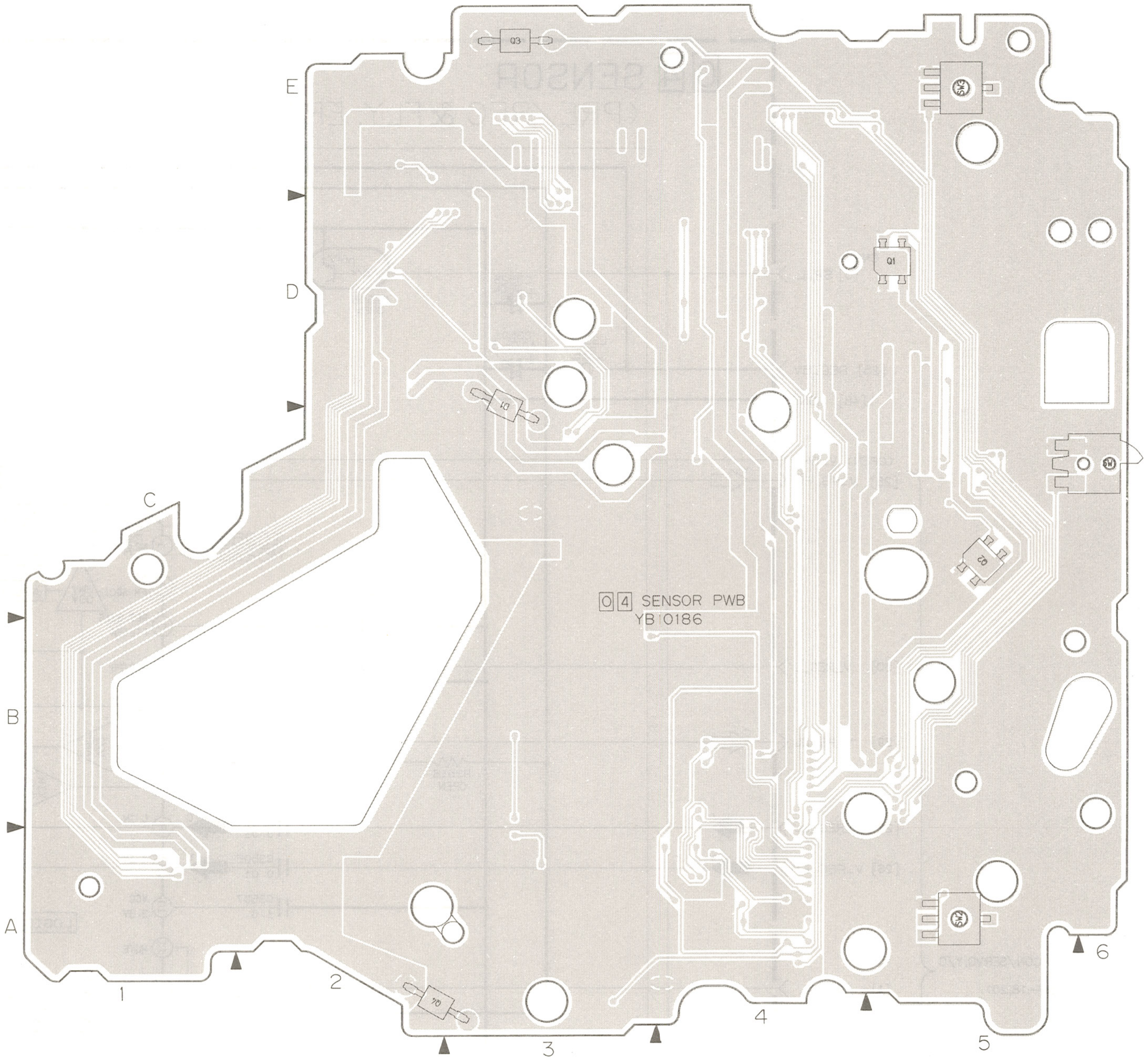

04 SENSOR
(PRE/REC & FLY. ERASE)
CN6
[3] SP_L
[25] REG_5V
[48] GND
(OPEN) V_ENV
[28] V_PB_FM
[30] V_REC_L
[29] V_PB_CU
[27] V_REC_CU
[26] V_REC_FM
[1] V_OVL
[6] V_PB_L
[5] FEH_ON
[2] V_RC_MUT
TO MECHACON/SERVO,Y/C CN101 (Page4-18,20)
L3501 22μ
C3526 OPEN
C3501 10/6.3
Q3505 OPEN
R3512 OPEN
R3511 OPEN
R3513 OPEN
C3525 OPEN
C3502 1.0
TL3501
R3516 OPEN
R3509 330
C3522 0.01
R3510
C3524 27p
2SD2114K/UV/-X Q3504
C3523 0.0033
C3520 0.0033
R3508 750
C3521 15P
L3901 100μ
R3904 820
2SA1610 Q3901
R3905 8.2
C3902 OPEN
C3901 1
IC3501 M52385FP
C3503 0.01
Q3508 OPEN
R3517 OPEN
R3518 OPEN
C3504 0.01
C3506 0.01
C3505 0.01
C3507 1.0
AGC DET
ENV DET
AGC AMP
EP/SP AMP
V/I AMP
Y/C MIX
CURR AMP2
CURR AMP4
CURR AMP1
CURR AMP3
PBAMP 2/4
PBAMP 1/3
LOGIC
FE
(REC PB SLOPE)
C3518 0.0033
C3519 10P
R3507 OPEN
Q3503 2SD2114K/UV/-X
C3517 0.01
R3506 330
C3514 0.01
R3504 330
Q3502 2SD2114K/UV/-X
R3505 OPEN
C3515 0.0033
C3516 10P
CN5
FE_F [11]
V_CH2_S [2]
V_CH2_F [1]
V_CH4_S [3]
V_CH4_F [4]
V_CH1_S [6]
V_CH1_F [5]
V_CH3_S [7]
V_CH3_F [8]
TO R/TRANS
R3514 10K
DTC144EE Q3506
Q3507 DTC144EE
C3508 0.015
R3515 24K
R3902 OPEN
R3903 7.5K
Q3902 OPEN
2SD2114K/UV/-X Q3501
C3509 0.01
R3501 330
R3502 OPEN
C3510 0.0033
C3511 27p
C3513 0.0033
C3512 12P
R3503 750
1
2
3
4
5
A
B
C
D
E
F
G
H

4.19 SENSOR CIRCUIT BOARD

FOIL SIDE (B)



COMPONENT SIDE (A)

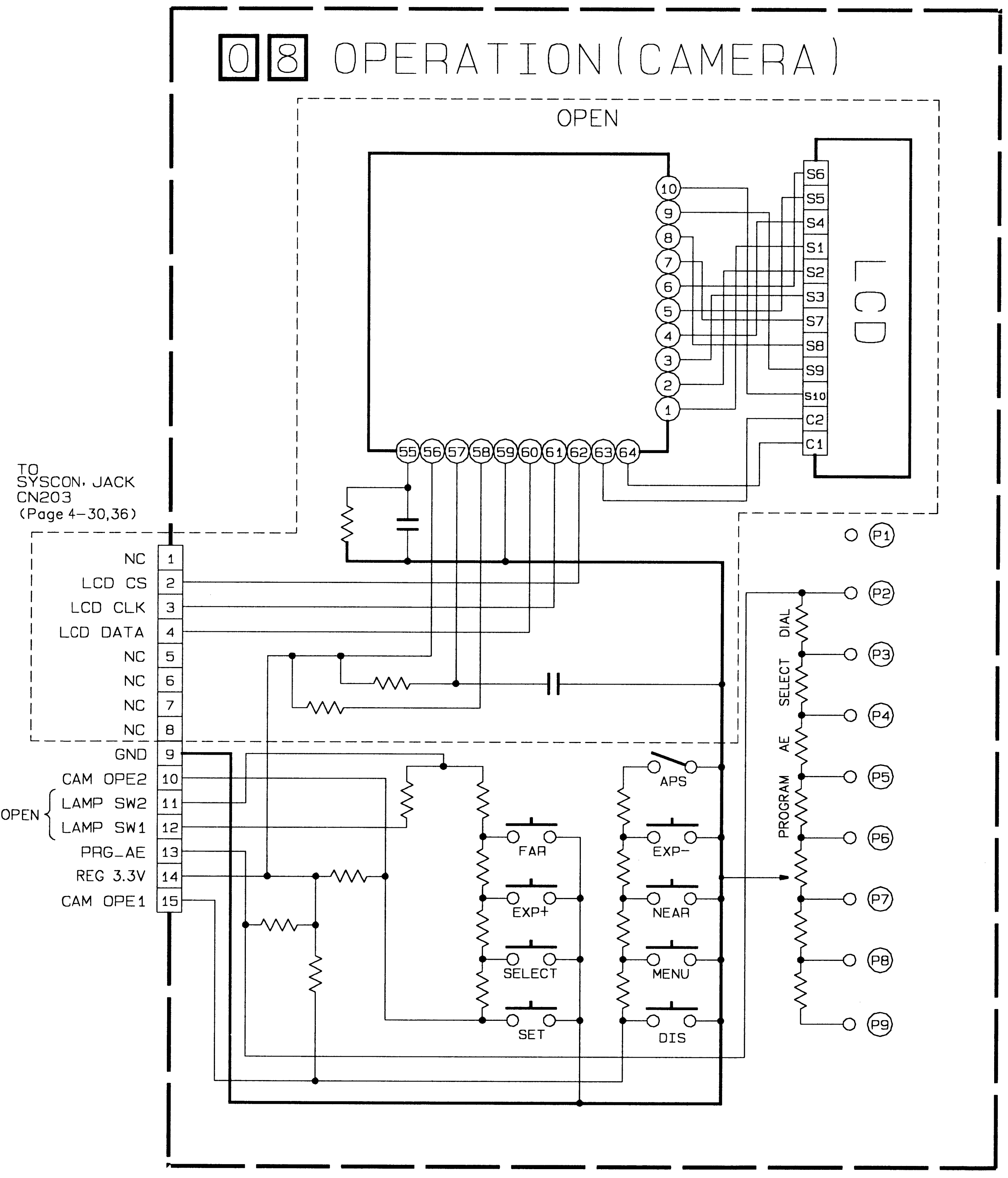


COMPONENT PARTS LOCATION GUIDE <SENSOR>

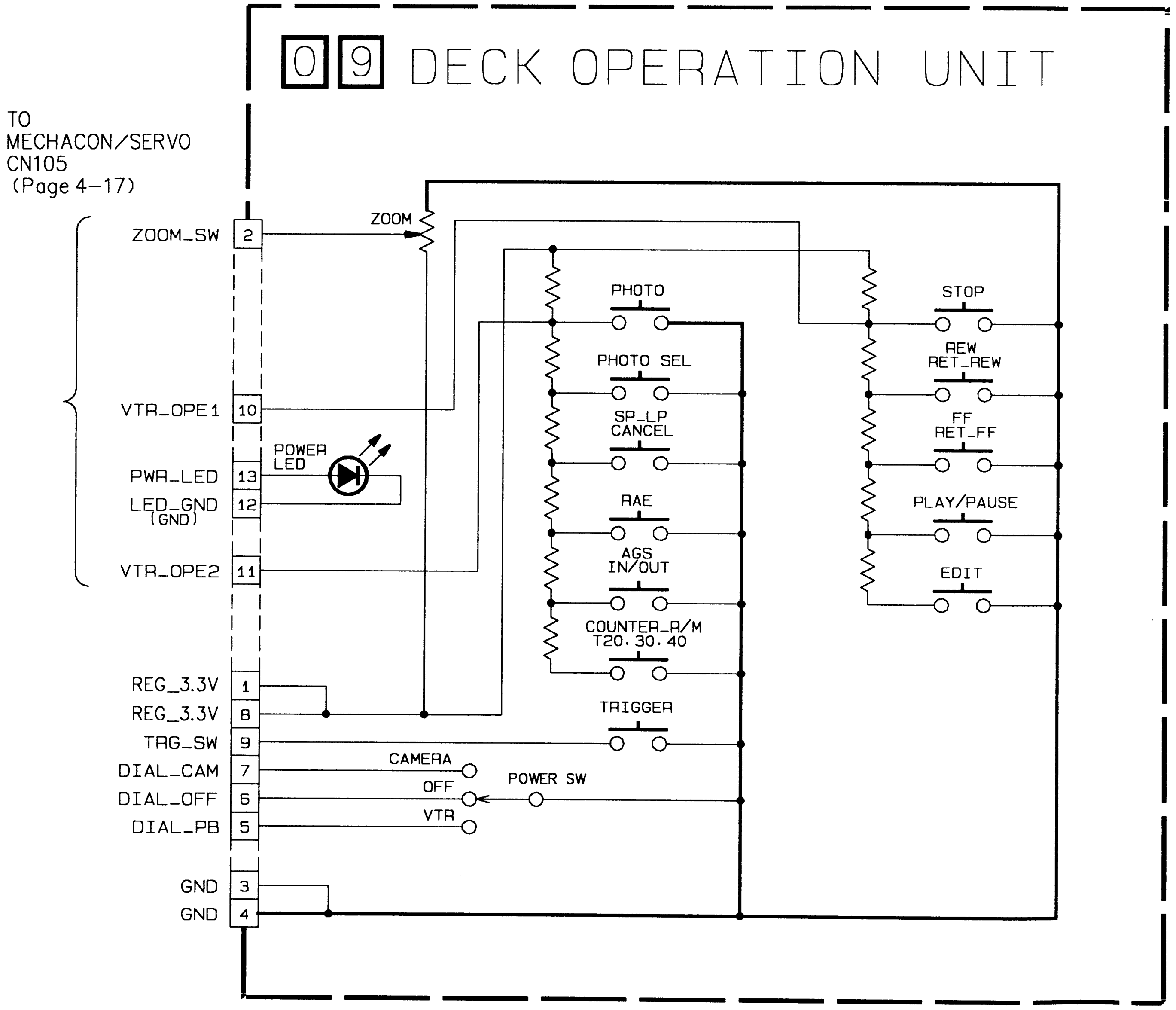
REF.No.	LOCATION		
CAPACITOR			
C1601	B	C	2D
C1602	B	C	2D
C1603	B	C	2D
C1604	B	C	2D
C1605	B	C	2D
C1606	B	C	2D
C1607	B	C	3D
C1608	B	C	3D
C1609	B	C	3D
C1610	B	C	3D
C1611	B	C	2D
C1612	B	C	3D
C1613	B	C	2D
C1614	B	C	3D
C1615	B	C	3D
C1616	B	C	4D
C1617	B	C	4D
C1618	B	C	3D
C1619	B	C	4D
C1620	B	C	4D
C1621	B	C	3D
C1622	B	C	3D
C1623	B	C	4D
C1624	B	C	4D
C1625	B	C	3D
C1626	B	C	3D
C1627	B	C	4D
C1628	B	C	3D
C1651	B	C	3E
C1652	B	C	3E
C1653	B	C	3E
C1654	B	C	4D
C1655	B	C	4D
C1656	B	C	4D
C1657	B	C	5E
C1658	B	C	4E
C1659	B	C	5E
C1660	B	C	5E
C1661	B	C	5E
C1662	B	C	4E
C1663	B	C	4E
C1664	B	C	5E
C1665	B	C	4E
C1701	B	C	5D
C1702	B	C	5D
C3501	B	C	4B
C3502	B	C	4B
C3503	B	C	4B
C3504	B	C	4B
C3505	B	C	4A
C3506	B	C	4B
C3507	B	C	4A
C3508	B	C	4A
C3509	B	C	3A
C3510	B	C	3A
C3511	B	C	3A
C3512	B	C	3A
C3513	B	C	3A
C3514	B	C	3A
C3515	B	C	3A
C3516	B	C	3A
C3517	B	C	3B
C3518	B	C	3B
C3519	B	C	3B
C3520	B	C	3B
C3521	B	C	3B
C3522	B	C	3B
C3523	B	C	3B
C3524	B	C	3B
C3525	B	C	4B
C3526	B	C	4B
C3901	B	C	3B
C3902	B	C	3B
CONNECTOR			
CN1	B	C	1A
CN2	B	C	5A
CN3	B	C	2D
CN4	B	C	1A
CN5	B	C	3A
CN6	B	C	4A
DIODE			
D1	A	D	3D
DA1701	B	C	5D
IC			
IC1602	B	C	4D
IC1651	B	C	4E
IC1701	B	C	5D
IC3501	B	C	4B
COIL			
L3501	B	C	4B
L3901	B	C	3B
TRANSISTOR			
Q1	A	C	5D
Q2	A	C	5C
Q3	A	D	3E
Q4	A	D	2A
Q3501	B	C	3A
Q3502	B	C	3A
Q3503	B	C	3B
Q3504	B	C	3B
Q3505	B	C	4B
Q3506	B	C	4A
Q3507	B	C	4A
Q3508	B	C	4A
Q3901	B	C	3B
Q3902	B	C	4A
QA1651	B	C	3E
RESISTOR			
R1601	B	C	3D
R1602	B	C	3D
R1603	B	C	4D
R1604	B	C	3D
R1605	B	C	3D
R1606	B	C	2D
R1607	B	C	4D
R1608	B	C	4D
R1609	B	C	4D
R1610	B	C	4D
R1651	B	C	4E
R1652	B	C	4E
R1653	B	C	4E
R1654	B	C	4E
R1655	B	C	5E
R1656	B	C	5E
R1657	B	C	5E
R1658	B	C	3E
R1659	B	C	3E
R1660	B	C	4E
R1661	B	C	4E
R1662	B	C	3E
R1701	B	C	5D
R1702	B	C	5D
R3501	B	C	3A
R3502	B	C	3A
R3503	B	C	3A
R3504	B	C	3A
R3505	B	C	3A
R3506	B	C	3B
R3507	B	C	3B
R3508	B	C	3B
R3509	B	C	3B
R3510	B	C	3B
R3511	B	C	4B
R3512	B	C	4B
R3513	B	C	4B
R3514	B	C	4A
R3515	B	C	4A
R3516	B	C	4B
R3517	B	C	4A
R3518	B	C	4A
R3902	B	C	4A
R3903	B	C	4A
R3904	B	C	3C
R3905	B	C	3B
TP1601	B	C	4D
TP1602	B	C	4D
TP1651	B	C	5E
OTHER			
SW1	A	C	5C
SW2	A	C	5A
SW3	A	C	5E

4.20 OPERATION UNIT AND OPERATION CAMERA SCHEMATIC DIAGRAMS

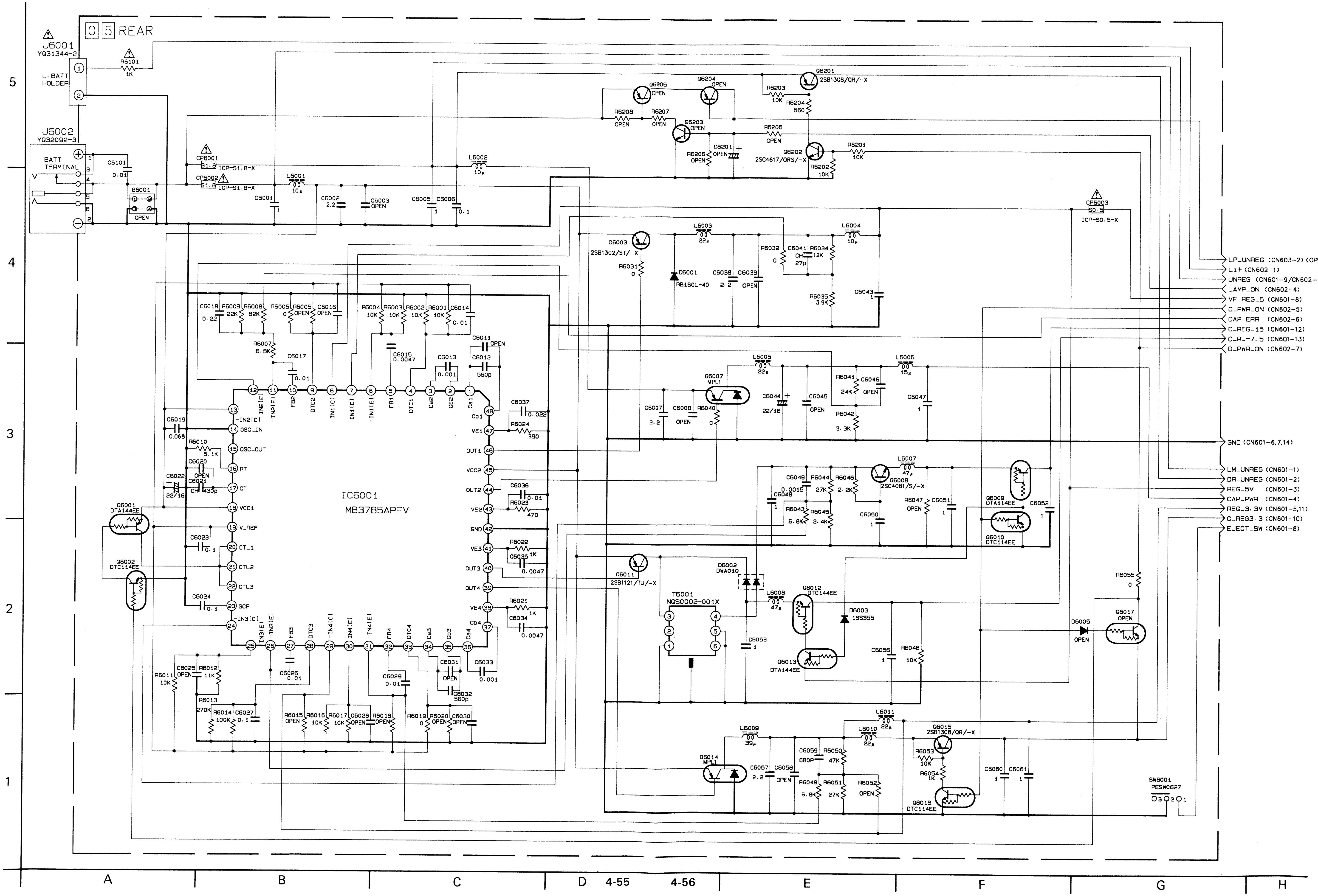
NOTE: This schematic diagram is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.


08 OPERATION(CAMERA)
OPEN
LCD
S6
S5
S4
S1
S2
S3
S7
S8
S9
S10
C2
C1
10
9
8
7
6
5
4
3
2
1
55 56 57 58 59 60 61 62 63 64
TO SYSCON, JACK CN203 (Page 4-30,36)
NC 1
LCD CS 2
LCD CLK 3
LCD DATA 4
NC 5
NC 6
NC 7
NC 8
GND 9
CAM OPE2 10
OPEN
LAMP SW2 11
LAMP SW1 12
PRG_AE 13
REG 3.3V 14
CAM OPE1 15
APS
FAR
EXP-
EXP+
NEAR
SELECT
MENU
SET
DIS
DIAL
SELECT
AE
PROGRAM
P1
P2
P3
P4
P5
P6
P7
P8
P9

NOTE: This schematic diagram is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.

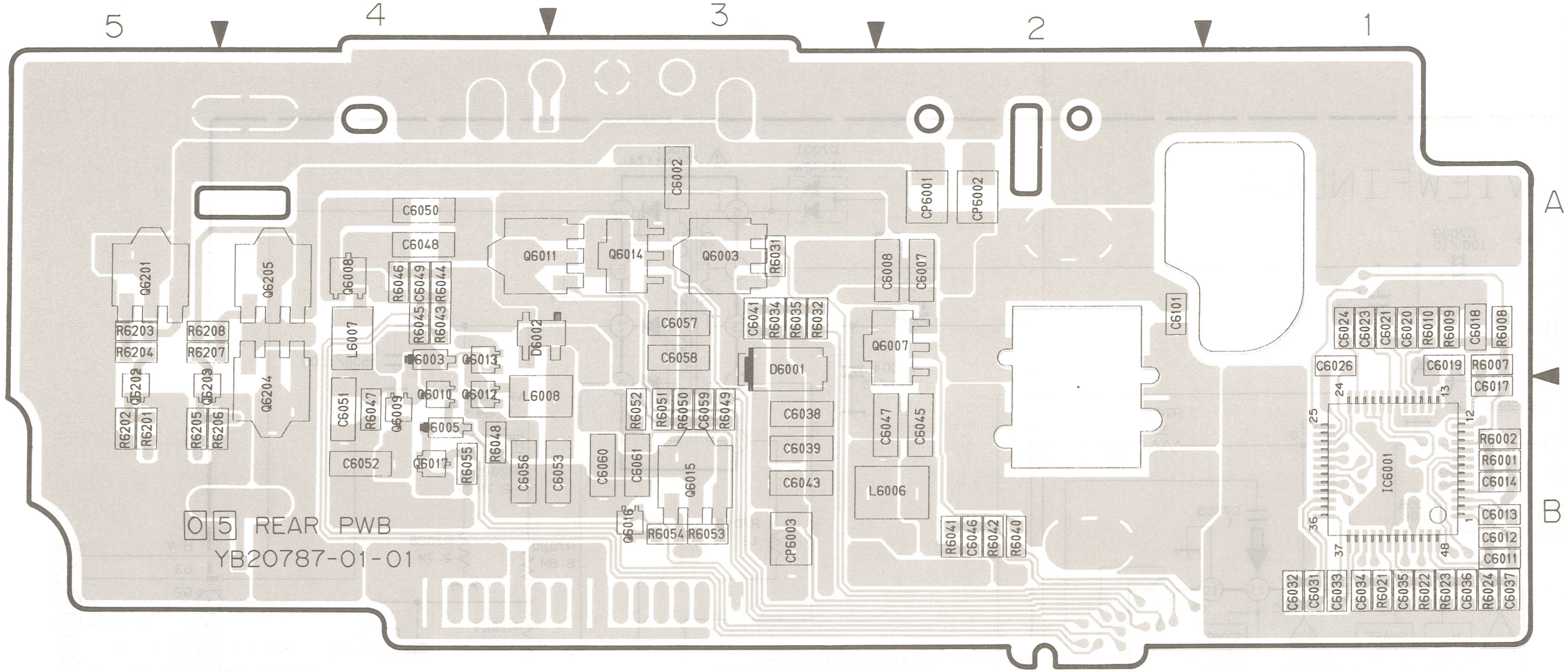

09 DECK OPERATION UNIT
TO MECHACON/SERVO CN105 (Page 4-17)
ZOOM_SW 2
VTR_OPE1 10
PWR_LED 13
LED_GND (GND) 12
VTR_OPE2 11
REG_3.3V 1
REG_3.3V 8
TRG_SW 9
DIAL_CAM 7
DIAL_OFF 6
DIAL_PB 5
GND 3
GND 4
ZOOM
POWER LED
PHOTO
PHOTO SEL
SP_LP CANCEL
RAE
AGS IN/OUT
COUNTER_R/M T20, 30, 40
TRIGGER
STOP
REW RET_REW
FF RET_FF
PLAY/PAUSE
EDIT
CAMERA
OFF
VTR
POWER SW

4.21 REAR SCHEMATIC DIAGRAM

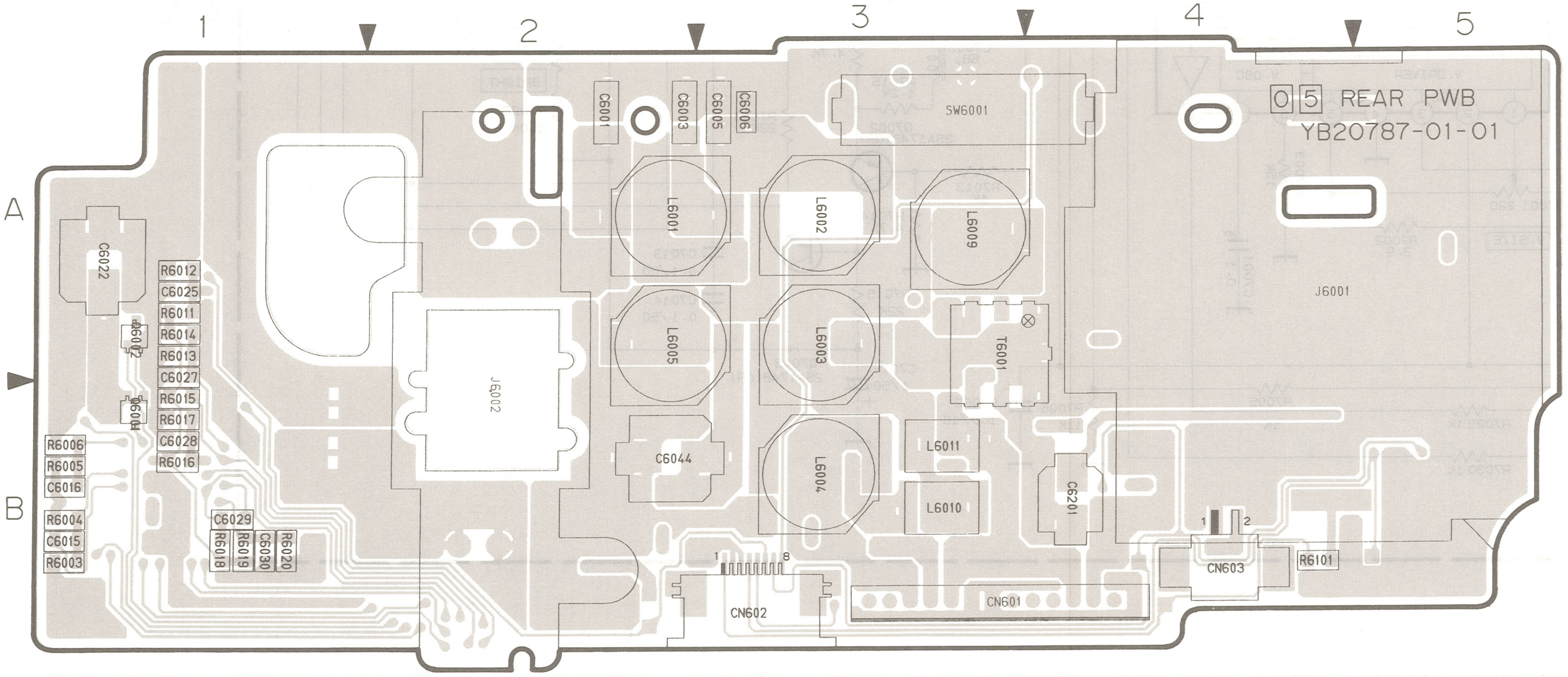

05 REAR
J6001
YQ31344-2
L.BATT HOLDER
R6101
1K
J6002
YQ32092-3
BATT TERMINAL
C6101
0.01
B6001
OPEN
CP6001
ICP-S1.8-X
CP6002
ICP-S1.8-X
L6001
10μ
C6001
1
C6002
2.2
C6003
OPEN
C6005
1
C6006
0.1
L6002
10μ
Q6205
OPEN
Q6204
OPEN
Q6201
2SB1308/QR/-X
R6203
10K
R6204
560
R6208
OPEN
R6207
OPEN
Q6203
OPEN
R6205
OPEN
C5201
OPEN
R6206
OPEN
Q6202
2SC4617/QRS/-X
R6201
10K
R6202
10K
CP6003
ICP-S0.5-X
Q6003
2SB1302/ST/-X
L6003
22μ
D6001
RB160L-40
C6038
2.2
C6039
OPEN
R6031
0
R6032
0
C6041
CH 27p
R6034
12K
L6004
10μ
R6035
3.9K
C6043
1
LP_UNREG (CN603-2) (OPEN)
Li+ (CN602-1)
UNREG (CN601-9/CN602-2,3)
LAMP_ON (CN602-4)
VF_REG_5 (CN601-8)
C_PWR_ON (CN602-5)
CAP_ERR (CN602-6)
C_REG_15 (CN601-12)
C_R_-7.5 (CN601-13)
D_PWR_ON (CN602-7)
GND (CN601-6,7,14)
LM_UNREG (CN601-1)
DR_UNREG (CN601-2)
REG_5V (CN601-3)
CAP_PWR (CN601-4)
REG_3.3V (CN601-5,11)
C_REG3.3 (CN601-10)
EJECT_SW (CN601-8)
C6018
0.22
R6009
22K
R6008
82K
R6006
0
R6005
OPEN
C6016
OPEN
R6004
10K
R6003
10K
R6002
10K
R6001
10K
C6014
0.01
R6007
6.8K
C6017
0.01
C6015
0.0047
C6013
0.001
C6011
OPEN
C6012
560p
C6037
0.022
R6024
390
C6036
0.01
R6023
470
R6022
1K
C6035
0.0047
R6021
1K
C6034
0.0047
C6019
0.068
R6010
5.1K
C6020
OPEN
C6021
CH 430p
C6022
22/16
C6023
0.1
C6024
0.1
Q6001
DTA144EE
Q6002
DTC114EE
IC6001
MB3785APFV
-IN2(C)
OSC_IN
OSC_OUT
RT
CT
VCC1
V_REF
CTL1
CTL2
CTL3
SCP
-IN3(C)
IN2(E)
-IN2(E)
FB2
DTC2
-IN1(C)
IN1(E)
-IN1(E)
FB1
DTC1
Ca2
Cb2
Ca1
Cb1
VE1
OUT1
VCC2
OUT2
VE2
GND
VE3
OUT3
OUT4
VE4
Cb4
IN3(E)
-IN3(E)
FB3
DTC3
-IN4(C)
IN4(E)
-IN4(E)
FB4
DTC4
Ca3
Cb3
Ca4
R6011
10K
C6025
OPEN
R6012
11K
R6013
270K
R6014
100K
C6027
0.1
C6026
0.01
R6015
OPEN
R6016
10K
R6017
10K
C6028
OPEN
R6018
OPEN
C6029
0.01
R6019
0
R6020
OPEN
C6030
OPEN
C6031
OPEN
C6032
560p
C6033
0.001
L6005
22μ
L6006
15μ
Q6007
MPL1
C6007
2.2
C6008
OPEN
R6040
0
C6044
22/16
C6045
OPEN
R6041
24K
C6046
OPEN
R6042
3.3K
C6047
1
L6007
47μ
C6048
1
C6049
0.0015
R6044
27K
R6046
2.2K
Q6008
2SC4081/S/-X
R6043
6.8K
R6045
2.4K
C6050
1
R6047
OPEN
C6051
1
Q6009
DTA114EE
C6052
1
Q6010
DTC114EE
Q6011
2SB1121/TU/-X
D6002
DWA010
T6001
NQS0002-001X
L6008
47μ
C6053
1
Q6012
DTC144EE
D6003
1SS355
Q6013
DTA144EE
C6056
1
R6048
10K
R6055
0
D6005
OPEN
Q6017
OPEN
L6009
39μ
L6011
22μ
L6010
22μ
Q6014
MPL1
C6057
2.2
C6058
OPEN
C6059
680P
R6050
47K
R6049
6.8K
R6051
27K
R6052
OPEN
Q6015
2SB1308/QR/-X
R6053
10K
R6054
1K
Q6016
DTC114EE
C6060
1
C6061
1
SW6001
PESW0627
A
B
C
D
E
F
G
H
1
2
3
4
5

4.22 REAR CIRCUIT BOARD

FOIL SIDE (B)


5
4
3
2
1
A
B
05 REAR PWB
YB20787-01-01
Q6201
Q6205
Q6204
R6203
R6204
R6208
R6207
Q6202
Q6203
R6202
R6201
R6205
R6206
C6050
C6048
Q6008
R6046
C6049
R6044
R6045
R6043
L6007
D6003
Q6013
Q6010
C6012
D6005
Q6009
C6051
R6047
C6052
Q6017
R6055
R6048
C6056
C6053
C6060
C6061
Q6015
Q6016
R6054
R6053
Q6011
Q6014
Q6003
D6002
L6008
C6057
C6058
R6052
R6051
R6050
C6059
R6049
C6002
R6031
C6041
R6034
R6035
R6032
D6001
C6038
C6039
C6043
CP6003
C6008
C6007
Q6007
C6047
C6045
L6006
R6041
C6046
R6042
R6040
CP6001
CP6002
C6101
C6024
C6023
C6021
C6020
R6010
R6009
C6018
R6008
C6026
C6019
R6007
C6017
IC6001
R6002
R6001
C6014
C6013
C6012
C6011
C6032
C6031
C6033
C6034
R6021
C6035
R6022
R6023
C6036
R6024
C6037
25
24
13
12
36
37
48
1

COMPONENT SIDE (A)

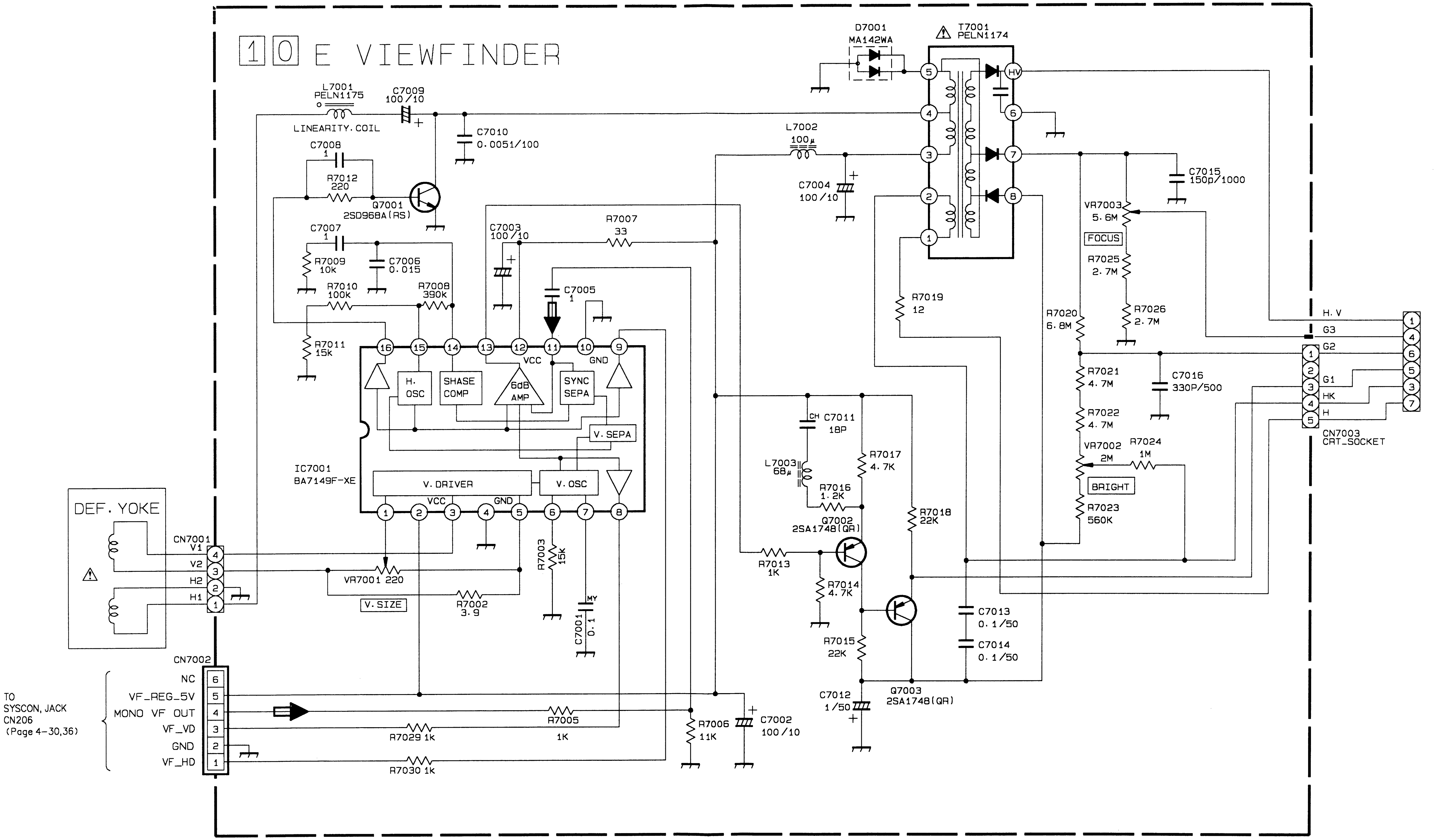

1
2
3
4
5
A
B
05 REAR PWB
YB20787-01-01
C6001
C6003
C6005
C6006
SW6001
L6001
L6002
L6009
L6005
L6003
T6001
J6001
J6002
C6022
R6012
C6025
R6011
R6014
R6013
C6027
R6015
R6017
C6028
R6016
C6009
C6010
R6006
R6005
C6016
R6004
C6015
R6003
C6029
R6018
R6019
C6030
R6020
C6044
L6004
L6011
L6010
C6201
CN603
R6101
CN602
CN601
1
8
1
2

COMPONENT PARTS LOCATION GUIDE <REAR PWB>

REF.No.	LOCATION		
CAPACITOR			
C6001	A	C	2A
C6002	B	C	3A
C6003	A	C	2A
C6005	A	C	3A
C6006	A	C	3A
C6007	B	C	2A
C6008	B	C	2A
C6011	B	C	1B
C6012	B	C	1B
C6013	B	C	1B
C6014	B	C	1B
C6015	A	C	1B
C6016	A	C	1B
C6017	B	C	1B
C6018	B	C	1A
C6019	B	C	1A
C6020	B	C	1A
C6021	B	C	1A
C6022	A	C	1A
C6023	B	C	1A
C6024	B	C	1A
C6025	A	C	1A
C6026	B	C	1A
C6027	A	C	1A
C6028	A	C	1B
C6029	A	C	1B
C6030	A	C	1B
C6031	B	C	1B
C6032	B	C	1B
C6033	B	C	1B
C6034	B	C	1B
C6035	B	C	1B
C6036	B	C	1B
C6037	B	C	1B
C6038	B	C	3B
C6039	B	C	3B
C6041	B	C	3A
C6043	B	C	3B
C6044	A	C	2B
C6045	B	C	2B
C6046	B	C	2B
C6047	B	C	2B
C6048	B	C	4A
C6049	B	C	4A
C6050	B	C	4A
C6051	B	C	4B
C6052	B	C	4B
C6053	B	C	3B
C6056	B	C	4B
C6057	B	C	3A
C6058	B	C	3A
C6059	B	C	3B
C6060	B	C	3B
C6061	B	C	3B
C6101	B	C	2A
C6201	A	C	4B
CONNECTOR			
CN601	A	D	3B
CN602	A	C	3B
CN603	A	C	4B
CIRCUIT PROTECTOR			
CP6001	B	C	2A
CP6002	B	C	2A
CP6003	B	C	3B
DIODE			
D6001	B	C	3A
D6002	B	C	4A
D6003	B	C	4A
D6005	B	C	4B
IC			
IC6001	B	C	1B
COIL			
L6001	A	C	2A
L6002	A	C	3A
L6003	A	C	3A
L6004	A	C	3B
L6005	A	C	2A
L6006	B	C	2B
L6007	B	C	4A
L6008	B	C	4B
L6009	A	C	3A
L6010	A	C	3B
L6011	A	C	3B
TRANSISTOR			
Q6001	A	C	1B
Q6002	A	C	1A
Q6003	B	C	3A
Q6007	B	C	2A
Q6008	B	C	4A
Q6009	B	C	4B
Q6010	B	C	4B
Q6011	B	C	4A
Q6012	B	C	4B
Q6013	B	C	4A
Q6014	B	C	3A
Q6015	B	C	3B
Q6016	B	C	3B
Q6017	B	C	4B
Q6201	B	C	5A
Q6202	B	C	5B
Q6203	B	C	5B
Q6204	B	C	4B
Q6205	B	C	4A
RESISTOR			
R6001	B	C	1B
R6002	B	C	1B
R6003	A	C	1B
R6004	A	C	1B
R6005	A	C	1B
R6006	A	C	1B
R6007	B	C	1A
R6008	B	C	1A
R6009	B	C	1A
R6010	B	C	1A
R6011	A	C	1A
R6012	A	C	1A
R6013	A	C	1A
R6014	A	C	1A
R6015	A	C	1B
R6016	A	C	1B
R6017	A	C	1B
R6018	A	C	1B
R6019	A	C	1B
R6020	A	C	1B
R6021	B	C	1B
R6022	B	C	1B
R6023	B	C	1B
R6024	B	C	1B
R6031	B	C	3A
R6032	B	C	3A
R6034	B	C	3A
R6035	B	C	3A
R6040	B	C	2B
R6041	B	C	2B
R6042	B	C	2B
R6043	B	C	4A
R6044	B	C	4A
R6045	B	C	4A
R6046	B	C	4A
R6047	B	C	4B
R6048	B	C	4B
R6049	B	C	3B
R6050	B	C	3B
R6051	B	C	3B
R6052	B	C	3B
R6053	B	C	3B
R6054	B	C	3B
R6055	B	C	4B
R6101	A	C	4B
R6201	B	C	5B
R6202	B	C	5B
R6203	B	C	5A
R6204	B	C	5A
R6205	B	C	5B
R6206	B	C	5B
R6207	B	C	5A
R6208	B	C	5A
OTHER			
J6001	A	D	4A
J6002	A	D	2B
SW6001	A	D	4A
T6001	A	C	3A

4.23 ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAM

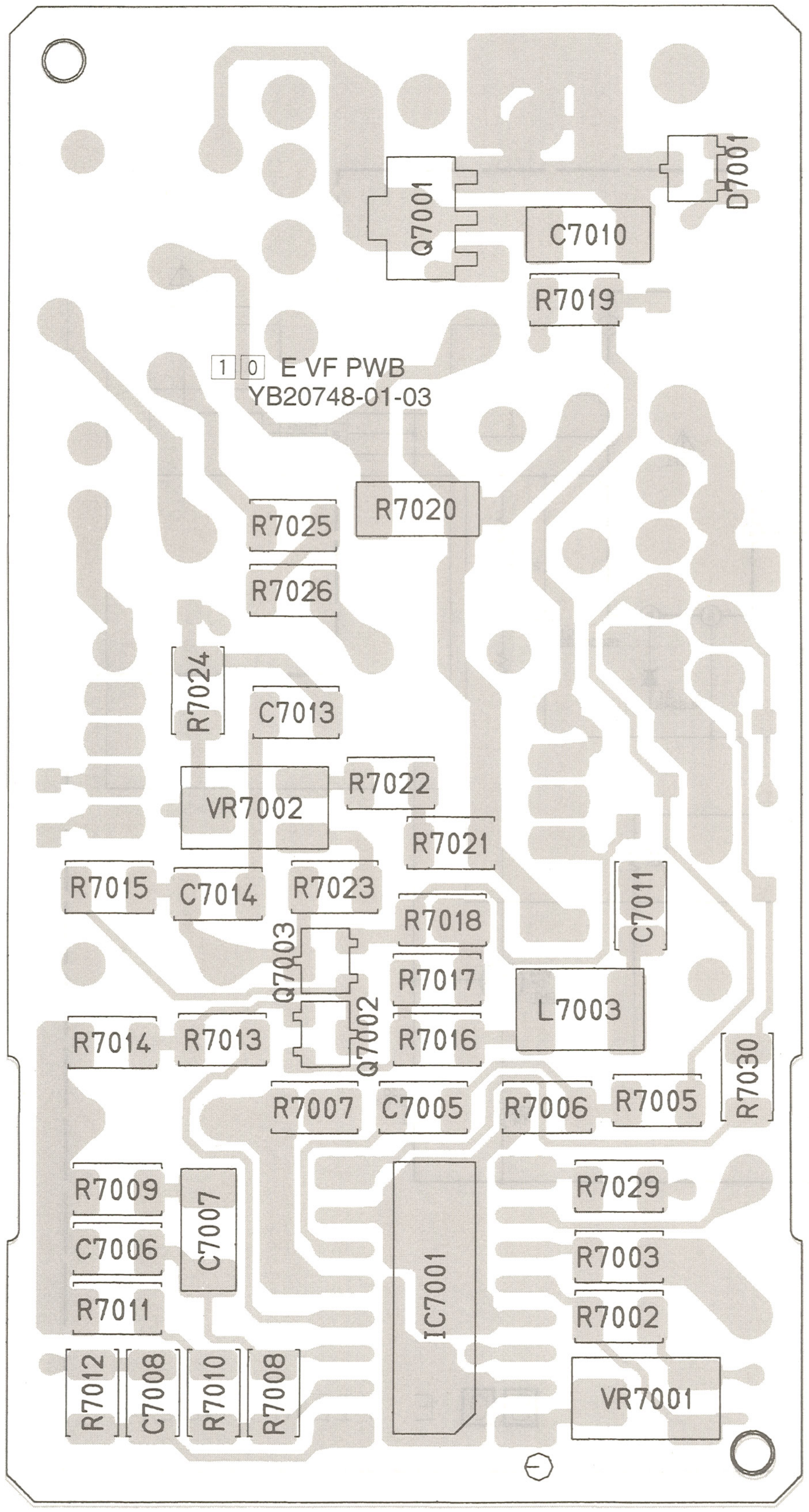
(TYPE T)


10 E VIEWFINDER
L7001
PELN1175
LINEARITY. COIL
C7009
100/10
C7010
0.0051/100
C7008
1
R7012
220
Q7001
2SD968A(RS)
C7007
1
R7009
10k
C7006
0.015
R7010
100k
R7008
390k
R7011
15k
C7003
100/10
R7007
33
C7005
1
H. OSC
SHASE COMP
6dB AMP
SYNC SEPA
V. SEPA
VCC
GND
IC7001
BA7149F-XE
V. DRIVER
V. OSC
DEF. YOKE
CN7001
V1
V2
H2
H1
VR7001 220
V. SIZE
R7002
3.9
R7003
15k
C7001
0.1
CN7002
TO
SYSCON, JACK
CN206
(Page 4-30,36)
NC
VF_REG_5V
MONO VF OUT
VF_VD
GND
VF_HD
R7029 1k
R7005
1K
R7030 1k
R7006
11K
C7002
100/10
D7001
MA142WA
T7001
PELN1174
HV
L7002
100µ
C7004
100/10
R7019
12
C7011
18P
L7003
68µ
R7017
4.7K
R7016
1.2K
Q7002
2SA1748(QR)
R7013
1K
R7014
4.7K
R7015
22K
C7012
1/50
R7018
22K
Q7003
2SA1748(QR)
C7013
0.1/50
C7014
0.1/50
C7015
150p/1000
VR7003
5.6M
FOCUS
R7025
2.7M
R7026
2.7M
R7020
6.8M
R7021
4.7M
C7016
330P/500
R7022
4.7M
VR7002
2M
R7024
1M
BRIGHT
R7023
560K
H.V
G3
G2
G1
HK
H
CN7003
CRT_SOCKET

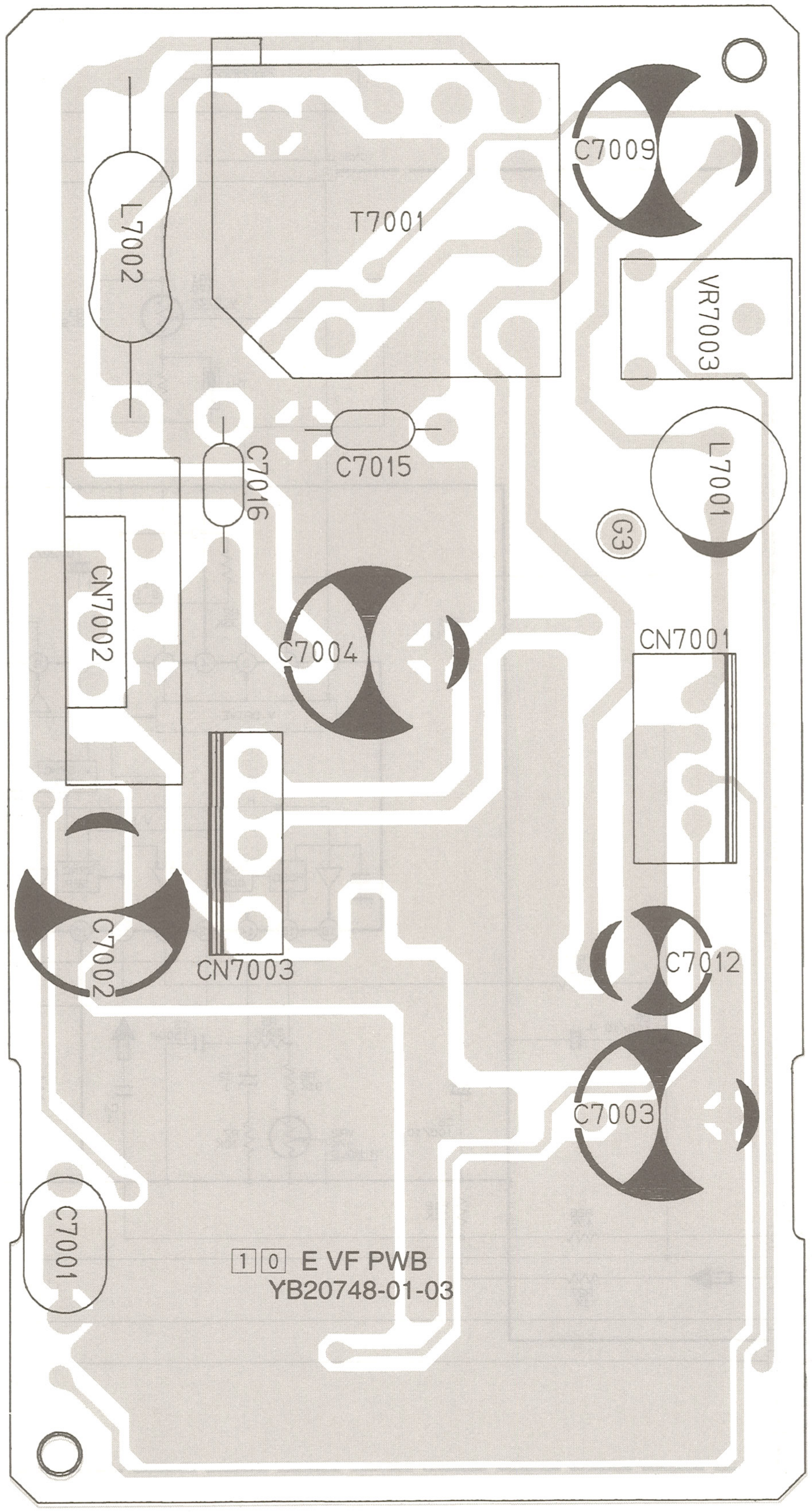
4.24 ELECTRONIC VIEWFINDER CIRCUIT BOARD

(TYPE T)

FOIL SIDE (B)

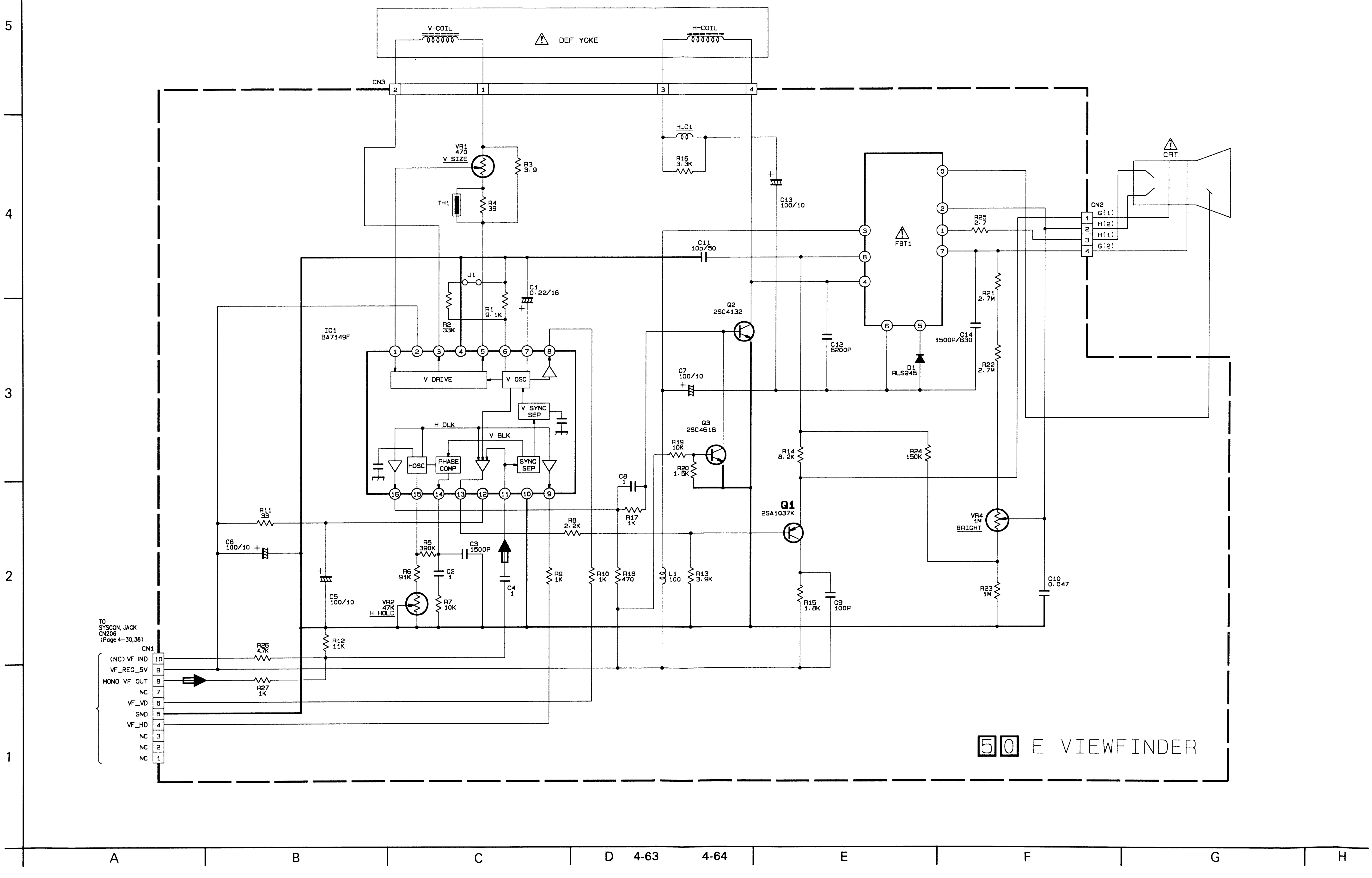

D7001
Q7001
C7010
R7019
1 0 E VF PWB
YB20748-01-03
R7020
R7025
R7026
R7024
C7013
VR7002
R7022
R7021
R7015
C7014
R7023
R7018
C7011
Q7003
R7017
L7003
Q7002
R7014
R7013
R7016
R7030
R7007
C7005
R7006
R7005
R7009
C7007
R7029
C7006
IC7001
R7003
R7011
R7002
R7012
C7008
R7010
R7008
VR7001

COMPONENT SIDE (A)


C7009
L7002
T7001
VR7003
C7016
C7015
L7001
G3
CN7002
C7004
CN7001
C7002
CN7003
C7012
C7003
C7001
1 0 E VF PWB
YB20748-01-03

4.25 ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAM

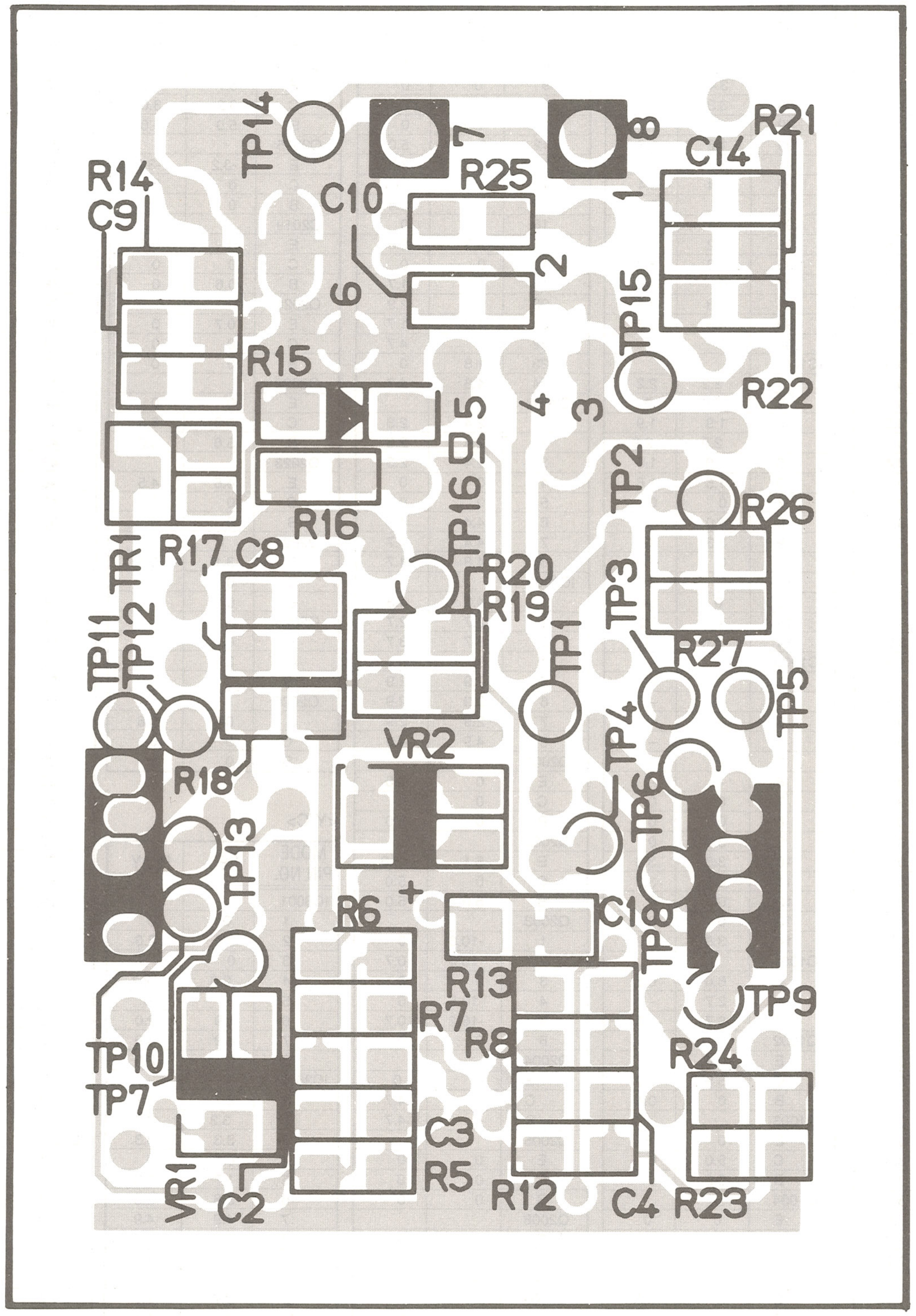
(TYPE M)


V-COIL
DEF YOKE
H-COIL
CN3
2
1
3
4
HLC1
R16 3.3K
VR1 470 V SIZE
R3 3.9
TH1
R4 39
C13 100/10
CRT
CN2
1 G(1)
2 H(2)
3 H(1)
4 G(2)
R25 2.7
FBT1
0
2
1
7
3
8
4
6
5
C11 10p/50
J1
C1 0.22/16
R1 9.1K
R2 33K
IC1 BA7149F
V DRIVE
V OSC
V SYNC SEP
H BLK
V BLK
HOSC
PHASE COMP
SYNC SEP
Q2 2SC4132
C12 6200P
D1 RLS245
C14 1500P/630
R21 2.7M
R22 2.7M
C7 100/10
Q3 2SC4618
R19 10K
R20 1.5K
R14 8.2K
R24 150K
C8 1
R17 1K
Q1 2SA1037K
VR4 1M BRIGHT
R11 33
R8 2.2K
C6 100/10
R5 390K
C3 1500P
C2 1
R6 91K
C4 1
R9 1K
R10 1K
R18 470
L1 100
R13 3.9K
R15 1.8K
C9 100P
R23 1M
C10 0.047
C5 100/10
VR2 47K H HOLD
R7 10K
R12 11K
TO SYSCON, JACK CN206 (Page 4–30,36)
CN1
(NC) VF IND 10
VF_REG_5V 9
MONO VF OUT 8
NC 7
VF_VD 6
GND 5
VF_HD 4
NC 3
NC 2
NC 1
R26 4.7K
R27 1K
50 E VIEWFINDER
5
4
3
2
1
A
B
C
D
E
F
G
H

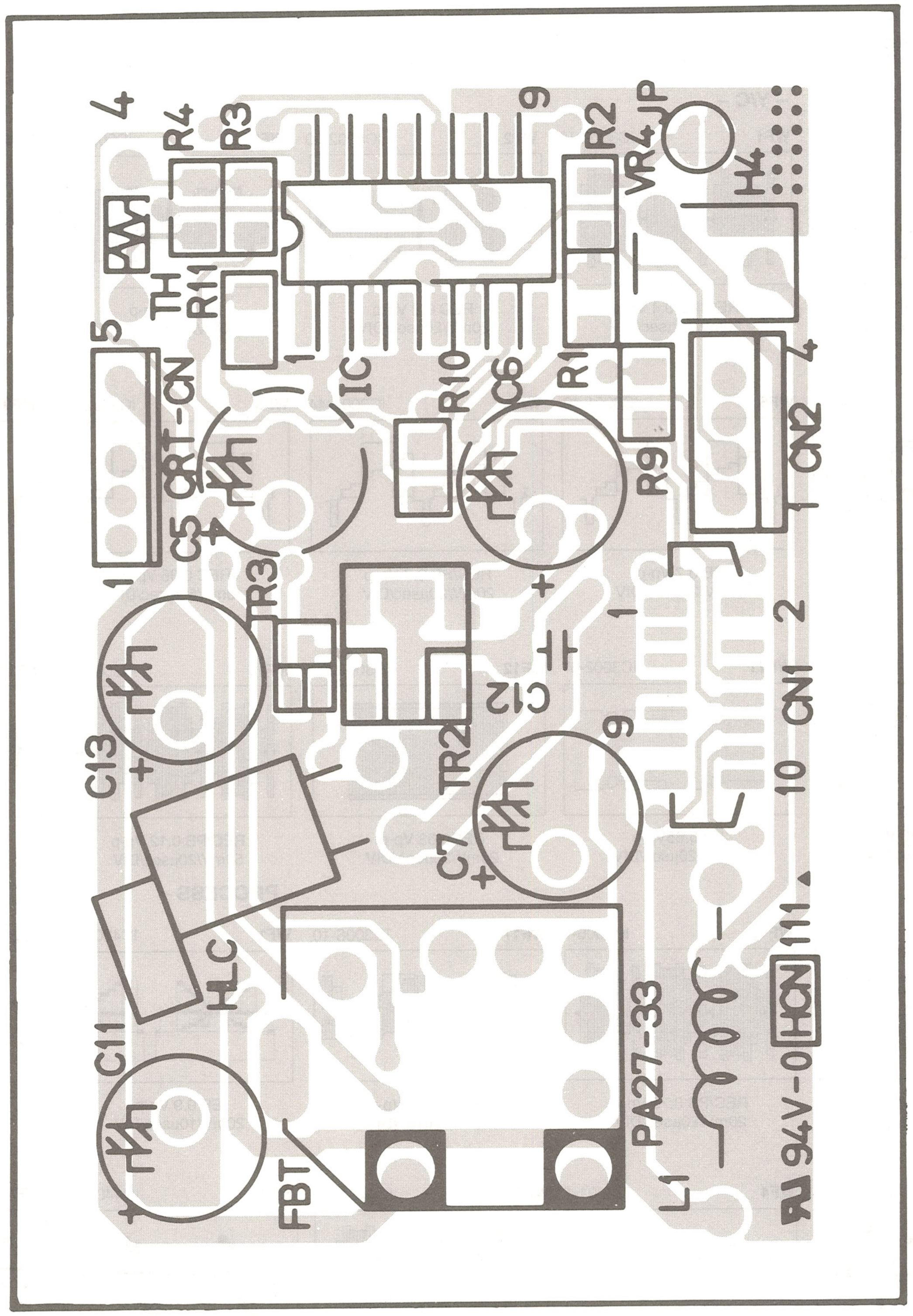
4.26 ELECTRONIC VIEWFINDER CIRCUIT BOARD

(TYPE M)

FOIL SIDE (B)


TP14
7
8
R21
R14
C9
C10
R25
C14
1
2
6
TP15
R15
5
4
3
D1
R22
TP2
R26
TP16
R16
TR1
R17
C8
R20
R19
TP3
TP11
TP12
TP1
R27
TP5
TP4
R18
VR2
TP6
TP13
R6
C1
TP8
R13
R7
R8
TP9
R24
TP10
TP7
C3
R5
R12
C4
R23
VR1
C2

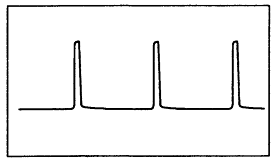
COMPONENT SIDE (A)


4
R4
R3
9
R2
VR4
JP
H4
TH
R11
1
IC
R10
C6
R1
5
CRT-CN
C5
1
TR3
R9
CN2
4
1
1
2
C12
CN1
C13
9
TR2
10
C7
111
HLC
C11
PA27-33
HCN
94V-0
FBT
L1

4.27 WAVEFORMS

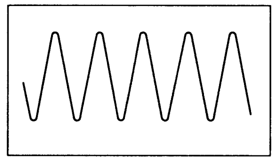
- MECHACON -

WF1 IC1001-66



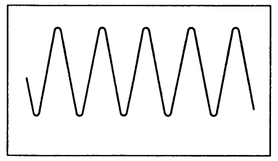
REC/PB 1.9 Vp-p
50mV/5msec/DIV

WF2 IC1001-67



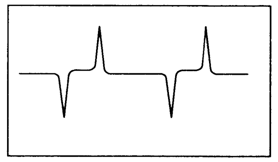
REC/PB 0.56 Vp-p
20mV/2msec/DIV

WF3 IC1001-68



REC/PB 2.6Vp-p
50mV/2msec/DIV

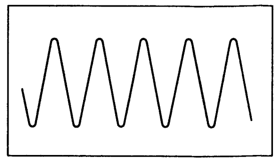
WF4 IC1001-73



PB 1.4 Vp-p
50mV/5msec/DIV

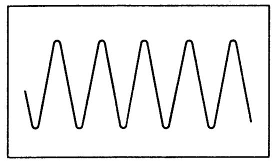
- MDA -

WF1 IC1602-7



REC/PB 0.6Vp-p
50mV/2msec/DIV

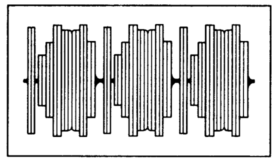
WF2 IC1651-15



REC/PB 3.1 Vp-p
0.1V/0.5msec/DIV

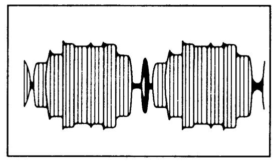
- Y/C -

WF1 IC3002-18



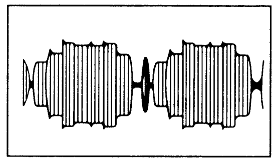
REC/PB 0.4 Vp-p
20mV/20μsec/DIV

WF2 IC3002-20



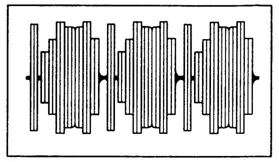
REC 0.2 Vp-p
20mV/20μsec/DIV

WF3 IC3002-25



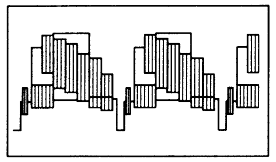
PB 0.9 Vp-p
50mV/20μsec/DIV

WF4 IC3002-27



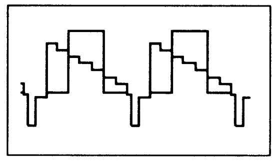
RECPB 0.8 Vp-p
50mV/20μsec/DIV

WF5 IC3002-31



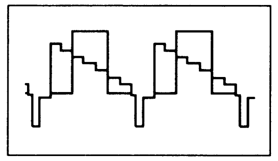
REC/PB 1.4 Vp-p
50mV/20μsec/DIV

WF6 IC3001-40



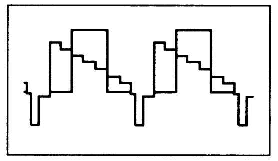
PB 0.7 Vp-p
20mV/20μsec/DIV

WF7 IC3002-44



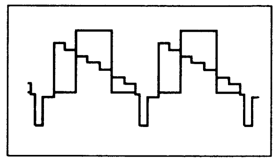
REC/PB 0.7 Vp-p
20mV/20μsec/DIV

WF8 IC3002-46



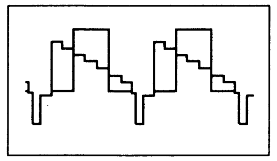
REC 0.36 Vp-p
10mV/50msec/DIV

WF9 IC3002-55



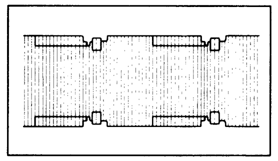
REC/PB 0.3 Vp-p
10mV/5msec/DIV

WF10 IC3002-57



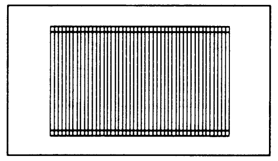
REC/PB 0.33 Vp-p
10mV/20μsec/DIV

WF11 IC3002-67



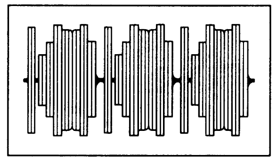
PB 0.65Vp-p
20mV/20μsec/DIV

WF12 IC3002-70



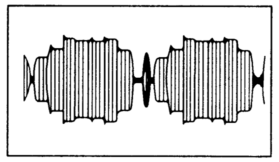
REC0.63 Vp-p
20mV/20μsec/DIV

WF13 IC3002-77



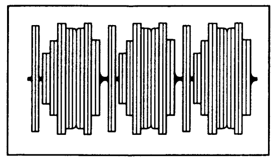
REC/PB 0.12 Vp-p
50mV/20μsec/DIV

WF14 IC3002-79



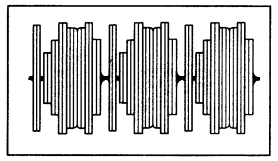
PB 0.16 Vp-p
50mV/20μsec/DIV

WF15 IC3002-80



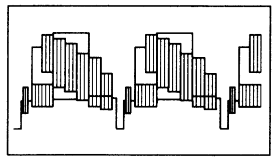
REC 0.34 Vp-p
10mV/20μsec/DIV

WF16 IC3006-7



REC/PB 0.73 Vp-p
20mV/20μsec/DIV

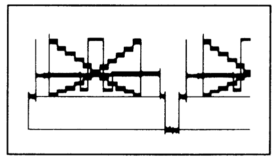
WF17 IC3006-10



REC/PB 1.6 Vp-p
50mV/20μsec/DIV

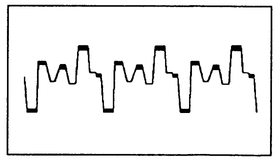
- PROCESS -

WF1 IC4201-61



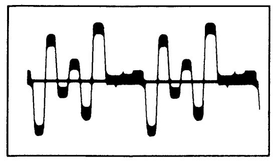
EE 0.9 Vp-p
20mV/10μsec/DIV

WF2 IC4201-57



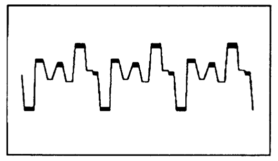
EE 0.6 Vp-p
20mV/20μsec/DIV

WF3 IC4201-53



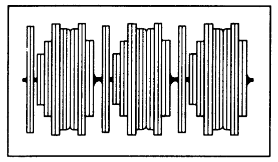
EE 0.6 Vp-p
10mV/20μsec/DIV

WF4 IC4401-1



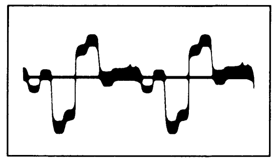
EE 0.5 Vp-p
20mV/10μsec/DIV

WF5 IC4401-11



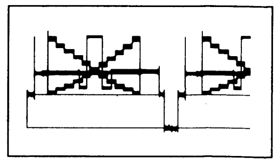
EE 2.0 Vp-p
50mV/1μsec/DIV

WF6 IC4401-23



EE 0.45 Vp-p
20mV/20μsec/DIV

WF7 IC4001-10



EE 0.9 Vp-p
20mV/20μsec/DIV

4.28 VOLTAGE CHARTS

<MECHACON/SERVO>

MODE PIN NO.	REC	PLAY
IC100		
1	0	2.0
2	0	0
3	1.0	1.0
4	1.9	1.9
5	0	0
6	2.2	2.1
7	0	0
8	0	0
9	0	0
10	3.3	3.1
11	0	3.3
12	0	0
13	0	0
14	0	0
15	0	0
16	1.6	1.6
17	1.6	1.6
18	0	3.3
19	3.3	3.3
20	0	3.3
21	0	0
22	0	0
23	0	3.3
24	3.3	0
25	3.3	0
26	3.3	3.3
27	0	0
28	3.3	3.4
29	0	0
30	0	0
31	3.3	3.3
32	3.3	3.3
33	–	–
34	–	–
35	0	0
36	0	0
37	3.3	3.3
38	1.5	1.5
39	1.5	1.5
40	3.3	3.3
41	0	0
42	0	0
43	2.9	3.0
44	3.3	3.4
45	3.4	3.4
46	0	0
47	0	0
48	0	0
49	0	0
50	0	0
51	0	0
52	0	0
53	0	3.3
54	0	3.3
55	3.3	0
56	0	0
57	0	0
58	0	0
59	3.3	0
60	0	0
61	0.4	0.4
62	0	0
63	3.3	3.3
64	0	0
65	3.4	3.4
66	0.6	0.6
67	1.7	1.7
68	1.7	1.7
69	1.7	1.7
70	1.7	1.7
71	1.8	1.5
72	1.5	1.9
73	1.7	1.7
74	1.7	1.7
75	1.7	1.7
76	0	0
77	1.8	0
78	1.5	0
79	0	0
80	0	0
81	3.3	3.3
82	3.4	3.4
83	0	0
84	3.1	3.1
85	0	0
86	0	0
87	3.4	3.4
88	3.3	3.4
89	1.7	1.7
90	1.6	1.6
91	3.3	3.3
92	3.4	3.4
93	0	0
94	2.1	2.1
95	3.2	3.2
96	3.3	3.3
97	0	2.5
98	3.3	3.3
99	3.3	3.3
100	0	0
IC1002		
1	2.2	2.2
2	5.0	0
3	1.9	1.9
4	2.9	2.9
5	1.0	1.0
6	1.5	1.6
7	0	0
8	5.0	0
9	3.3	0
10	0	5.0
11	0	3.3
12	0	5.0
13	0	3.3
14	5.0	5.0
IC1003		
1	–	–
2	–	–
3	–	–
4	–	–
5	–	–
6	–	–
7	0	0
8	0	0
9	3.3	0
10	3.3	3.3
11	3.3	3.3
12	0	0
13	0	0
14	3.3	3.3
Q1001		
E	6.6	6.6
C	2.7	-
B	6.7	6.7
Q1002		
E	0.4	0
C	5.9	6.0
B	0	0.4
Q1003		
E	0	5.0
C	5.0	0
B	5.0	0
Q1004		
E	0	0
C	0	0
B	0	3.3
Q1201		
E	0	3.3
C	1.5	0
B	0	0
Q1202		
E	0.7	0
C	0	5.0
B	0	0

<AUDIO>

MODE PIN NO.	REC	PLAY
C2001		
1	1.8	1.8
2	2.4	0
3	2.4	2.3
4	2.4	2.3
5	2.4	2.4
6	2.4	0
7	0	0
8	1.6	1.6
9	0	0
10	2.4	0
11	2.1	0
12	0	5.0
13	2.4	2.3
14	4.6	0.4
15	0	2.4
16	0	0
17	3.3	2.9
18	0	0
19	1.7	1.7
20	0	2.9
21	1.8	1.7
22	0	4.7
23	1.8	0
24	4.8	4.7
IC2002		
1	2.4	2.3
2	2.4	2.3
3	2.4	2.3
4	0	0
5	0	0
6	4.4	4.7
7	4.4	4.7
8	4.8	4.7
IC2003		
1	4.3	4.3
2	2.7	2.7
3	3.7	3.7
4	0	0
5	2.9	2.9
6	2.9	2.9
7	2.9	2.9
8	4.9	4.9
Q2001		
E	0	5.0
C	0	0
B	0	5.0
Q2002		
E	5.1	5.0
C	0	5.0
B	5.0	5.0
Q2003		
1	-10.6	0
2	-16.6	0.7
3	0	0
4	-10.5	0
5	-16.2	0.7
6	0	0
Q2004		
E	–	0
C	–	4.7
B	–	4.7
Q2005		
E	0	0
C	0	0
B	0	0
Q2008		
E	–	0
C	–	0
B	–	0
Q2009		
E	3.2	0
C	0	0
B	0	3.1
Q2011		
E	0	0
C	0	1.2
B	0	0
Q2012		
E	3.3	3.3
C	0	0
B	3.3	0
Q2013		
E	0	0
C	7.8	6.3
B	0	0
Q2014		
E	6.7	6.6
C	3.2	3.0
B	5.0	5.0
Q2015		
E	-3.2	-3.2
C	0	0
B	0	0
Q2019		
E	0	0.7
C	0	0
B	0.6	0
Q2021		
E	0.7	0
C	0	0
B	0	0
Q2022		
E	0	0
C	5.0	5.0
B	5.0	5.0
Q2023		
E	4.5	4.5
C	0	0
B	0	0
Q2024		
E	3.1	3.1
C	0	0
B	0	0
Q2025		
E	0	0
C	3.1	0
B	0	0
Q2026		
E	0.6	0.6
C	0	0
B	0	0

<Y/C>

MODE PIN NO.	REC	PLAY
IC3001		
1	0	0
2	2.6	2.6
3	0	0
4	2.6	2.7
5	0	0
6	1.9	2.0
7	4.9	4.9
8	0	2.0
IC3002		
1	2.7	2.7
2	3.3	3.3
3	3.3	3.3
4	0.4	0
5	1.7	1.6
6	2.8	2.8
7	4.9	4.9
8	2.8	2.8
9	2.6	2.6
10	2.6	2.6
11	2.7	2.7
12	1.4	1.4
13	3.6	3.6
14	1.2	1.2
15	2.0	1.9
16	1.8	0
17	2.0	2.0
18	2.0	2.0
19	2.6	2.4
20	2.0	2.0
21	0 0	
22	0 0	
23	2.0	2.0
24	0	0
25	2.7	2.7
26	2.7	2.7
27	2.0	2.0
28	2.0	2.0
29	0	0
30	3.1	3.1
31	2.5	2.5
32	2.7	2.7
33	2.5	2.6
34	2.7	2.7
35	1.6	2.4
36	0	0
37	2.4	2.4
38	0.4	0
39	2.1	1.8
40	3.4	3.4
41	3.1	2.0
42	1.9	1.1
43	3.4	3.4
44	2.0	2.6
45	1.3	1.3
46	2.3	2.2
47	1.5	1.5
48	2.2	2.2
49	1.8	1.1
50	2.4	2.4
51	3.1	3.1
52	0	0
53	3.1	3.1
54	2.1	2.1
55	3.0	3.0
56	1.2	1.2
57	2.2	2.1
58	1.1	1.1
59	0	0.8
60	2.5	2.8
61	0	0.8
62	2.1	2.1
63	2.1	2.1
64	0	4.8
65	4.9	4.9
66	0	0
67	0	2.7
68	1.4	1.4
69	0	0
70	3.2	4.3
71	5.0	5.0
72	0	0
73	1.2	1.1
74	2.6	2.7
75	2.7	2.7
76	2.9	2.9
77	2.7	2.7
78	4.9	4.9
79	2.0	2.0
80	2.0	3.9
IC3003		
1	0	0
2	4.9	4.9
3	0	0
4	4.9	4.9
5	0	0
6	2.5	2.5
7	2.4	2.5
8	2.1	2.0
9	3.7	3.8
10	2.2	1.9
11	2.5	2.6
12	10.4	10.5
13	0	0
14	2.5	2.4
15	2.0	1.7

MODE PIN NO.	REC	PLAY
16	3.3	3.2
IC3004		
1	5.0	0
2	0	0
3	0	0
4	3.1	3.1
5	3.0	3.0
6	2.3	0
7	2.3	0
8	4.7	1.6
9	1.6	1.6
10	1.3	1.8
11	2.5	2.6
12	2..5	2.6
13	0	0
14	3.2	3.2
15	3.1	3.2
16	3.2	3.2
IC3005		
1	0	0
2	3.4	0
3	0	0
4	4.8	2.1
5	2.9	0
6	3.8	3.8
7	0	0
8	2.0	2.0
9	1.5	1.5
10	0	0
11	1.9	2.0
12	2.9	2.8
13	0	2.9
14	0	3.3
15	0	3.3
16	4.1	4.1
17	3.1	3.1
18	4.9	4.9
19	3.6	0
20	0	2.7
IC3006		
1	0.4	0.5
2	1.6	2.4
3	0	0
4	0	0
5	1.9	1.9
6	0	0
7	2.0	2.0
8	0	0
9	2.1	2.4
10	2.1	2.5
11	2.1	2.5
12	2.1	2.5
13	0	0
14	0	0
15	2.4	2.6
16	5.0	5.0
IC3011		
1	0.1	0
2	0	4.9
3	0	0
4	2.8	2.8
5	0	0
6	0	4.1
7	4.5	0.5
8	5.0	4.9
9	0	4.1
10	5.0	5.0
11	2.8	2.8
12	1.6	1.7
13	0.9	0.9
14	3.3	3.3
15	3.4	3.2
16	1.3	1.4
17	4.0	4.0
18	0.9	0.9
19	4.7	4.8
20	0.7	0.7
Q3006		

MODE PIN NO.	REC	PLAY
E	5.0	0
C	0	4.9
B	0	0
Q3007		
E	3.3	3.1
C	0	0
B	0	0
Q3008		
E	0	1.5
C	0	0
B	2.0	2.0
Q3009		
E	0	1.9
C	0	0
B	2.5	2.5
Q3010		
E	0.5	2.7
C	3.0	0
B	0	0
Q3011		
E	3.2	3.2
C	4.9	4.9
B	2.6	2.6
Q3012		
E	2.3	0
C	4.9	4.9
B	0	1.7
Q3013		
E	3.7	3.8
C	4.9	5.0
B	3.1	3.2
Q3014		
E	1.7	1.7
C	5.0	5.0
B	1.2	1.2
Q3015		
E	1.1	1.1
C 0	0	
B	1.7 1.7	
Q3016		
E	1.5 0	
C	3.1 3.0	
B	0.9 0	
Q3017		
E	4.8	4.8
C	3.1	3.1
B	4.9	4.9
Q3018		
E	0	0
C	4.9	4.8
B	0	0
Q3019		
E	3.1	3.1
C	4.3	4.3
B	2.5	0
Q3020		
E	4.3	4.3
C	3.9	3.9
B	4.9	4.9
Q3021		
E	3.9	3.9
C	4.9	4.9
B	3.3	3.3
Q3022		
E	0	0
C	0	0
B	0	0
Q3023		
E	0	0
C	0.7	4.9
B	0	0
Q3024		
E	0.4	2.7
C	0	0
B	0.7	0.9
Q3025		
1	0.6	3.4
2	0.7	0

MODE PIN NO.	REC	PLAY
3	0.7	0
4	0.6	4.9
5	1.2	3.4
6	0.7	4.9
Q3 026		
E	1.9	2.2
C	1.2	0
B	1.2	1.6
Q3027		
E	0	0.4
C	0.6	4.1
B	0	0
Q3028		
E	0.6	4.1
C	0.7	0
B	0 0	
Q3029		
E	0	0.4
C	1.2	4.1
B	0	0
Q3031		
1	0.9	0
2	1.6	1.6
3	4.9	4.9
4	1.4	3.4
5	2.0	3.9
6	3.8	3.8
Q3032		
E	5.0	4.3
C	0	0
B	5.0	5.0
Q3033		
E	1.2	1.3
C	0	0
B	1.9	1.9
Q3035		
E	1.5	0
C	3.1	3.1
B	0.9	0.9

<JACK>

MODE PIN NO.	REC	PLAY
IC51		
1	2.0	2.1
2	0	0
3	1.7	1.7
4	0	0
5	-2.2	-2.2
6	-5.0	-5.0
7	-1.3	-1.3
8	0	0

<SYSCON>

MODE PIN NO.	REC	PLAY
IC101		
1	2.8	0
2	2.0	0
3	1.4	0
4	3.3	3.3
5	3.2	0
6	3.2	0
7	3.3	0
8	3.2	0.4
9	0	0
10	3.3	0
11	3.3	0
12	3.3	0
13	0	0
14	3.3	3.3
15	0	3.3
16	0	0
17	3.3	3.3
18	3.3	0
19	3.3	3.3
20	0	0
21	3.3	0
22	3.3	0
23	3.3	0
24	1.1	0
25	0	0
26	0	0
27	3.3	3.3
28	6.0	5.3
29	3.3	3.3
30	–	–
31	–	–
32	0	0
33	0	0
34	0	0
35	0	0
36	3.3	0
37	0	0
38	0	0
39	3.3	3.3
40	3.3	3.3
41	2.2	2.2
42	0	0
43	0.6	0.6
44	0	0
45	0	0
46	0	0
47	3.3	3.3
48	3.3	3.3
49	0	2.5
50	3.3	0
51	0	0
52	3.3	3.3
53	2.8	2.8
54	0	0
55	3.3	0
56	3.3	3.3
57	3.3	0
58	3.3	3.3
59	0	0
60	1.3	1.2
61	1.3	0
62	3.3	3.3
63	3.3	0
64	3.3	0
65	3.3	0
66	0	0
67	0	0
68	3.3	0
69	0	0
70	0	0
71	3.3	3.3
72	2.5	2.5
73	1.5	0
74	0	0
75	3.3	3.3
76	3.3	3.3
77	3.6	0

MODE PIN NO.	REC	PLAY
78	2.9	3.0
79	2.2	2.3
80	0	0
81	0	0
82	3.3	3.3
83	0	0
84	0	0
85	2.9	3.0
86	3.4	3.4
87	0	0
88	0	0
89	0	0
90	3.3	3.4
91	3.4	3.4
92	3.3	3.3
93	3.3	3.3
94	2.0	2.3
95	3.2	3.3
96	3.3	3.3
97	3.0	3.1
98	3.0	3.2
99		0 0
100	0	0
101	3.1	0
102	3.1	3.2
103	0	3.1
104	3.1	3.2
105	3.1	3.2
106	1.6	0
107	0	0
108	0	0
109	0	0
110	0	0
111	0	0
112	3.3	3.3
113	3.3	3.3
114	3.3	3.3
115	1.6	1.6
116	1.6	1.6
117	1.6	1.6
118	3.3	3.3
119	0	0
120	2.7	0
121	1.3	0
122	2.2	0
123	0	0
124	1.3	0
125	1.2	0
126	2.2	0
127	1.3	0
128	1.5	0
IC102		
1	2.7	2.7
2	0.6	0.6
3	2.4	2.4
4	3.3	3.4
5	3.4	0
6	0	0
7	1.3	1.3
8	1.3	1.3
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	2.8	2.8
20	2.7	2.7
IC103		
1	0	0
2	3.3	0
3	0	2.2
4	0	0
5	3.1	3.1

MODE PIN NO.	REC	PLAY
6	0.5	0.5
7	0.8	0.8
8	3.3	3.3
IC104		
1	3.3	3.3
2	2.4	2.2
3	3.3	3.3
4	0	0
5	3.2	3.2
6	3.3	3.3
7	3.3	3.3
8	3.3	3.3
IC106		
1	0	0
2	3.1	3.1
3	0	0
4	0	0
5	3.3	3.3
IC107		
1	0	0
2	0	0
3	0	0
4	3.3	3.3
5	3.3	3.3
IC108		
1	3.1	3.1
2	3.1	3.1
3	0	0
4	3.3	3.3
5	3.3	3.3
IC109		
1	0	0
2	3.3	3.3
3	3.3	3.3
4	3.3	3.3
5	3.3	3.3
6	0	3.3
7	0	0
8	3.3	3.3
9	3.3	3.3
10	3.3	3.3
11	3.3	3.3
12	3.3	3.3
13	3.4	3.4
14	3.3	3.3
IC110		
1	3.2	3.2
2	3.3	3.3
3	0	0
4	1.4	1.3
5	0	0
6	0	0
7	0	0
8	3.4	3.4
9	0	0
10	1.7	0
11	3.3	3.3
12	3.4	3.4
13	3.3	3.4
14	3.4	3.4
15	0	0
16	0	0
17	3.4	3.4
18	3.3	3.4
19	1.8	1.1
20	1.2	1.2
21	1.4	1.4
22	1.1	1.1
23	1.2	1.2
24	0.9	0.9
25	0	3.3
26	0	0
27	0	0
28	0	0
29	3.4	3.4
30	0	0
31	3.4	3.4
32	0	0

MODE PIN NO.	REC	PLAY
33	0	0
34	0	0
35	0	0
36	0	0
37	0	0
38	1.8	1.9
39	2.3	2.3
40	0	0
41	1.2	1.2
42	–	1.5
43	0.7	0.7
44	1.6	1.6
45	1.1	1.1
46	1.8	1.8
47	1.9	1.9
48	3.4	3.4
IC111		
1	0	0
2	6.6	6.8
3	0	3.3
Q102		
E	0	0
C	3.8	3.3
B	0	0
Q10 3		
E	5.9	5.9
C	6.6	6.7
B	6.6	6.7
Q104		
E	3.2	3.2
C	0.4	0.6
B	0	0
Q106		
E	5.0	5.0
C	4.9	2.6
B	0	5.0
Q107		
E	3.3	0
C	0	3.3
B	0	0
Q108		
E	0	0
C	0	5.0
B	3.3	0

<MDA>

MODE PIN NO.	REC	PLAY
IC1601		
1	1.6	1.6
2	6.5	6.5
3	0.5	0.5
4	1.6	1.6
5	1.6	1.6
6	1.6	1.6
7	0.7	0.7
8	0	0
9	0.8	0.8
10	0.8	0.8
11	0.8	0.8
12	1.1	1.1
13	0	0
14	5.0	5.0
15	0	0
16	3.3	3.3
17	5.0	5.0
18	1.6	0.7
19	5.7	5.8
20	2.9	2.9
21	2.9	2.9
22	1.6	1.6
23	2.9	2.9
24	2.5	2.5
25	0.6	0.6
26	6.4	6.6
27	6.4	6.6

MODE PIN NO.	REC	PLAY
28	6.3	6.6
29	1.6	1.6
30	0	0
31	1.6	1.6
32	0	0
IC1602		
1	0	0
2	0	0
3	0	0
4	3.4	3.4
5	1.7	1.7
6	1.7	1.7
7	1.7	1.7
8	1.7	1.7
9	1.7	1.7
10	1.7	1.7
11	0	0
12	1.7	1.7
13	1.7	1.7
14	0.6	0.6
IC1651		
1	0	0
2	1.6	1.6
3	2.1	2.1
4	1.2	1.3
5	0	0
6	1.5	1.5
7	1.1	1.2
8	0.5	0.5
9	3.9	4.0
10	0.6	0.7
11	0	0
12	0	0
13	0	0
14	5.0	5.0
15	2.5	2.5
16	2.5	2.5
17	0	2.5
18	4.2	4.2
19	0	0
20	2.5	2.5
21	2.5	2.5
22	2.5	2.5
23	2.5	2.5
24	2.5	2.5
25	2.5	2.5
26	1.6	1.6
27	1.6	1.6
28	1.6	1.6
29	0.7	0.7
30	0.7	0.9
31	0.7	0.7
32	0	0
IC1701		
1	2.0	0.8
2	6.6	6.8
3	5.0	5.0
4	0	0
5	0	0
6	4.2	4.2
7	2.1	0.9
8	0	0
QA1651		
8	0.8	0.7
9	2.1	1.6
10	0.7	0.8
11	1.6	1.6
12	0.9	0.9
13	2.9	1.6
14	2.1	2.1

<PRE/REC>

MODE PIN NO.	REC	PLAY
IC3501		
1	0	0
2	0	0
3	2.4	2.4
4	0	3.3
5	4.0	2.8
6	1.5	0
7	1.8	2.8
8	2.4	2.5
9	2.4	2.5
10	3.3	3.4
11	0	0
12	0	0
13	0	0
14	0	0
15	3.3	0.6
16	0.6	0.6
17	4.2	5.0
18	0	0
19	0	0
20	4.2	0
21	3.5	0.5
22	4.2	0
23	0	0.6
24	0	0.8
25	0	0
26	0	0.6
27	4.2	0
28	3.5	0.5
29	4.2	0
30	4.9	0
31	4.9	0
32	4.2	0
33	3.5	0.6
34	0	0
35	0	0.7
36	0	0
37	0	0.8
38	0	0.7
39	4.2	0
40	3.5	0.6
41	4.2	0
42	2.4	2.5
43	0	0
44	4.9	5.0
45	4.9	5.0
46	2.5	2.1
47	4.2	2.6
48	4.0	2.6
Q3501		
E	3.7	0.6
C	4.2	0
B	4.2	0
Q3502		
E	3.5	0.6
C	4.2	0
B	4.2	0
Q3503		
E	3.5	0.6
C	4.2	0
B	4.2	0
Q3504		
E	3.5	0.6
C	4.2	0
B	4.2	0
Q3506		
E	0	4.2
C	0	0
B	0	0
Q3507		
E	4.9	0
C	0	4.2
B	0	0
Q3901		
E	4.1	5.0
C	0	0
B	0	5.0

<REAR>

MODE PIN NO.	REC	PLAY
IC6001		
1	4.0	4.1
2	6.8	6.9
3	6.2	6.3
4	1.3	1.2
5	1.4	1.4
6	1.2	1.3
7	1.3	1.3
8	5.1	5.1
9	0	0
10	1.7	1.8
11	0	0
12	0	0
13	6.6	0
14	0	0
15	1.8	1.8
16	1.2	1.3
17	1.6	1.6
18	6.6	6.8
19	0	2.5
20	0	6.7
21	6.6	6.7
22	6.6	6.7
23	0	0
24	1.3	1.3
25	1.3	1.3
26	1.3	1.3
27	1.6	1.3
28	1.8	1.8
29	3.4	3.4
30	1.3	1.3
31	1.2	1.3
32	1.6	1.5
33	2.5	2.5
34	5.0	6.5
35	6.4	6.9
36	4.9	6.5
37	6.4	6.7
38	2.4	2.3
39	6.3	6.6
40	6.3	6.8
41	2.4	1.1
42	0	0
43	2.3	2.3
44	6.4	6.5
45	6.7	6.8
46	6.1	6.2
47	5.9	2.5
48	5.8	5.9
Q6001		
E	0	0
C	6.6	6.7
B	6.6	6.7
Q6002		
E	3.2	3.3
C	0	0
B	0	0
Q6003		
E	6.1	6.2
C	0	7.5
B	6.7	6.8
Q6007		
E	0	0
C	6.4	6.5
B	0	6.8
Q6008		
E	16.0	16.0
C	16.0	16.0
B	15.3	15.6
Q6009		
E	0	15.5
C	15.2	0
B	15.2	15.5
Q6010		
E	0	0
C	0	15.5
B	0	0

MODE PIN NO.	REC	PLAY
Q6011		
E	6.3	0
C	8.0	15.6
B	0	0
Q6012		
E	5.0	-8.5
C	-7.7	0
B	-7.7	-8.5
Q6013		
E	0.4	4.9
C	5.0	-8.5
B	5.0	5.0
Q6014		
E	0	0
C	6.3	6.5
B	6.7	6.8
Q6015		
E	2.7	3.4
C	3.4	0.2
B	3.4	3.4
Q6016		
E	3.3	0
C	0	3.4
B	0	0
Q6201		
E	6.0	6.1
C	6.7	6.8
B	6.7	6.8
Q6202		
E	0.7	0.7
C	0	0
B	0	0

<PROCESS>

MODE PIN NO.	EE
IC4001	
1	0
2	0
3	0
4	3.3
5	3.5
6	0
7	3.3
8	2.4
9	3.3
10	1.6
11	0
12	0
13	0
14	0
15	0
16	1.4
17	0
18	0
19	3.3
20	3.3
21	3.3
22	1.5
23	0
24	0
25	0
26	0
27	1.3
28	1.1
29	0
30	0
31	3.3
32	0.4
33	2.8
34	0
35	0
36	0
37	0
38	0
39	0
40	0
41	0
42	0
43	3.3
44	1.7
45	0
46	0
47	0
48	0
IC4002	
1	0
2	1.6
3	0
4	1.7
5	3.3
IC4201	
1	1.4
2	1.2
3	2.1
4	1.2
5	1.1
6	2.1
7	2.2
8	1.2
9	1.4
10	2.7
11	2.1
12	1.3
13	3.2
14	3.2
15	3.3
16	3.3
17	0
18	0
19	0
20	0
21	0
22	1.6
23	1.6
24	1.6
25	1.6
26	0
27	0
28	0
29	0
30	0
31	0
32	1.1
33	1.5
34	3.2
35	0
36	2.7
37	1.3
38	1.8
39	3.0
40	3.0
41	0
42	3.1
43	0.9
44	2.8
45	1.6
46	2.1
47	2.4
48	2.4
49	0
50	2.4
51	0
52	3.2
53	1.8
54	1.2
55	2.4
56	1.9
57	1.8
58	3.3
59	1.7
60	2.0
61	1.0
62	3.2
63	0
64	0
65	0
66	0
67	3.2
68	2.8
69	1.6
70	0
71	0
72	3.0
73	0
74	0
75	1.7
76	0
77	3.1
78	3.1
79	2.8
80	0
81	0
82	3.0
83	3.0
84	1.6
85	0
86	0
87	0.8
88	0.8
89	0
90	1.7
91	0
92	0
93	0
94	0
95	0.5
96	1.2
97	3.3
98	3.3
99	3.3
100	0
IC4202	
1	0
2	0
3	3.2
4	3.3
5	3.3
6	0
7	0
8	0
9	1.7
10	0
11	3.2
12	0
13	3.1
14	0
15	3.0
16	0
17	0
18	3.0
19	0.4
20	0.4
21	3.0
22	3.0
23	0
24	3.3
25	-1.6
26	3.3
27	3.3
28	3.3
29	0
30	0
31	0
32	1.6
33	0
34	3.2
35	0.9
36	3.0
37	3.1
38	0.7
39	2.5
40	2.4
41	0
42	2.5
43	0
44	3.3
45	0
46	0
47	0
48	0
49	0
50	0
51	0
52	0
53	0
54	0
55	0
56	0
57	0
58	3.2
59	0
60	1.5
61	3.1
62	2.5
63	3.3
64	0
65	0
66	0
67	2.5
68	0
69	0
70	0
71	0
72	2.5
73	0
74	2.5
75	0
76	2.5
77	1.3
78	2.4
79	2.4
80	1.4
81	3.0
82	0
83	3.0
84	3.0
85	2.0
86	1.2
87	2.3
88	0
89	3.2
90	0
91	0.5
92	0
93	0
94	0
95	0
96	0
97	0
98	0
99	0
100	0
IC4204	
1	3.3
2	0
3	0
4	0
5	3.2
IC4205	
1	0
2	5.0
3	3.3
IC4206	
1	3.3
2	0
3	1.2
4	5.0
5	6.7
IC4207	
1	0
2	0
3	0
4	0
5	3.3
IC4208	
1	3.3
2	0
3	1.2
4	5.0
5	6.7
IC4401	
1	1.8
2	0
3	0
4	1.8
5	1.8
6	0
7	2.9
8	2.9
9	1.1
10	0
11	2.5
12	0
13	0
14	5.0
15	0
16	0.8
17	3.2
18	0
19	1.7
20	1.8
21	1.8
22	0
23	1.8
24	1.8
IC4402	
1	0
2	0
3	0
4	2.4
5	1.9
6	4.9
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
Q4001	
E	2.2
C	3.3
B	1.6
Q4201	
E	1.8
C	0
B	2.4
Q4202	
E	1.9
C	0
B	2.5
Q4203	
E	2.4
C	5.0
B	1.8
Q4204	
E	3.7
C	5.0
B	3.1
Q4205	
E	1.0
C	-7.7
B	1.6
Q4207	
E	1.8
C	5.0
B	1.2
Q4401	
1	1.8
2	0
3	0
4	0
5	1.8
6	5.0
Q4402	
E	2.5
C	4.9
B	1.9

<AF/ZOOM>

MODE PIN NO.	EE
IC4801	
1	4.9
2	4.9
3	4.9
4	0
5	4.8
6	0
7	4.9
8	6.7
9	0.4
10	0
11	0
12	0.4
13	0
14	0
15	0
16	0
17	6.7
18	0
19	0
20	4.9
21	4.9
22	2.0
23	4.9
24	4.9
IC4802	
1	4.9
2	4.9
3	4.9
4	0
5	0
6	0
7	4.9
8	6.7
9	0.4
10	0
11	0
12	0.5
13	0
14	0
15	0
16	0
17	6.7
18	0
19	0
20	4.9
21	4.9
22	1.9
23	4.9
24	5.0
IC4803	
1	2.7
2	4.0
3	3.3
4	4.9
5	1.2
6	–
7	0
8	0
9	3.3
10	4.9
11	0
12	4.9
13	0
14	4.9
Q4801	
E	0
C	4.9
B	0
Q4802	
E	3.3
C	0
B	0

<IRIS>

MODE PIN NO.	EE
IC4901	
1	3.8
2	1.6
3	1.6
4	0
5	0.8
6	2.0
7	2.0
8	6.5
IC4902	
1	0
2	0.5
3	0.4
4	5.0
5	2.0
6	2.0
7	0.5
8	2.3
9	2.0
10	2.0
11	0
12	0
13	0
14	0.9
IC4903	
1	0
2	0.4
3	0
4	0.4
5	3.3
Q4901	
E	1.9
C	3.3
B	1.3
Q4902	
E	3.3
C	5.0
B	3.0
Q4903	
E	3.6
C	3.6
B	3.0
Q4904	
E	1.5
C	0
B	3.0
Q4905	
E	5.0
C	0
B	0
Q4906	
E	5.9
C	6.6
B	6.7

<CCD>

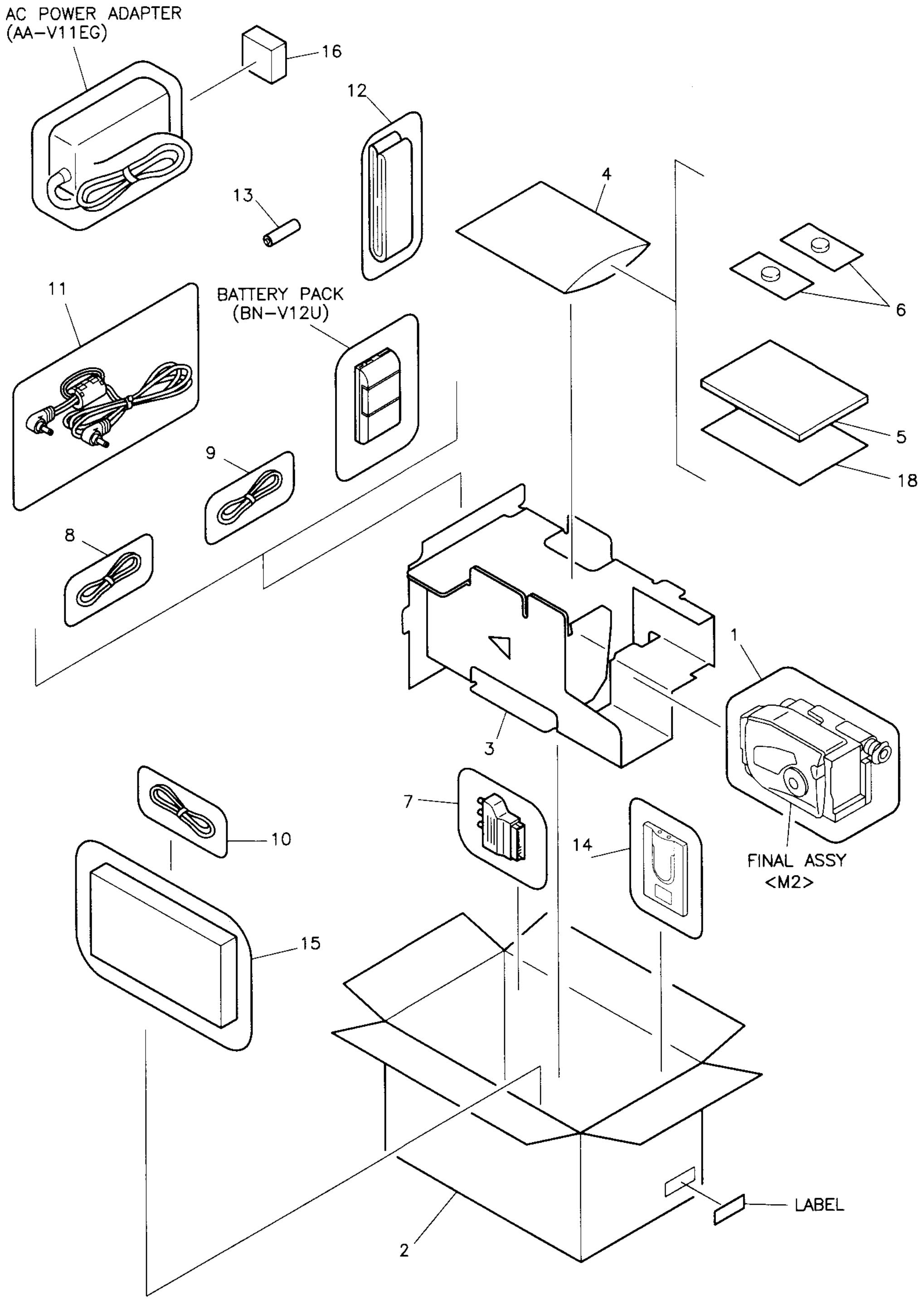
MODE PIN NO.	EE
IC5001	
1	-7.7
2	-7.6
3	0
4	0
5	0
6	3.7
7	0
8	3.2
9	0
10	3.3
11	0
12	3.0
13	3.2
14	0
15	0
16	15.1
17	-7.1
18	-7.1
19	0
20	15.1
IC5002	
1	3.0
2	0.8
3	0
4	1.7
5	0
6	0
7	0
8	0
9	3.3
10	0
11	1.4
12	0
13	3.2
14	0
15	3.2
16	3.3
17	0
18	0
19	3.0
20	3.0
21	3.2
22	2.1
23	2.1
24	3.3
25	3.3
26	0.7
27	0.5
28	2.3
29	0
30	0
31	0.7
32	3.3
33	3.2
34	1.8
35	1.5
36	0
37	1.6
38	3.3
39	3.2
40	0
41	0
42	0
43	0
44	0
45	0
46	0
47	3.3
48	3.2
49	1.5
50	3.0
51	3.0
52	3.2
53	3.2
54	0
55	3.4
56	0
57	3.3
58	0
59	0
60	0
61	0
62	0
63	0
64	3.3
IC5003	
1	0
2	1.9
3	4.9
4	0
5	0.6
6	0
7	0
8	1.9
9	2.2
10	1.9
11	4.9
12	1.9
13	1.4
14	3.4
15	0
16	-
17	1.3
18	0
19	0
20	2.0
21	1.8
22	1.3
23	1.1
24	0
25	0
26	1.9
27	1.7
28	0
29	1.9
30	0
31	1.9
32	1.9
33	0
34	0
35	1.2
36	0
37	1.9
38	0
39	2.8
40	4.9
41	0.6
42	0.7
43	0
44	0
45	0
46	1.6
47	1.4
48	0
Q5001	
E	10.8
C	15.1
B	10.2
Q5002	
E	1.6
C	4.9
B	0.9
Q5003	
1	4.3
2	3.7
3	4.3
4	5.0
5	3.7
6	3.7

SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING ASSEMBLY <M1>



# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION

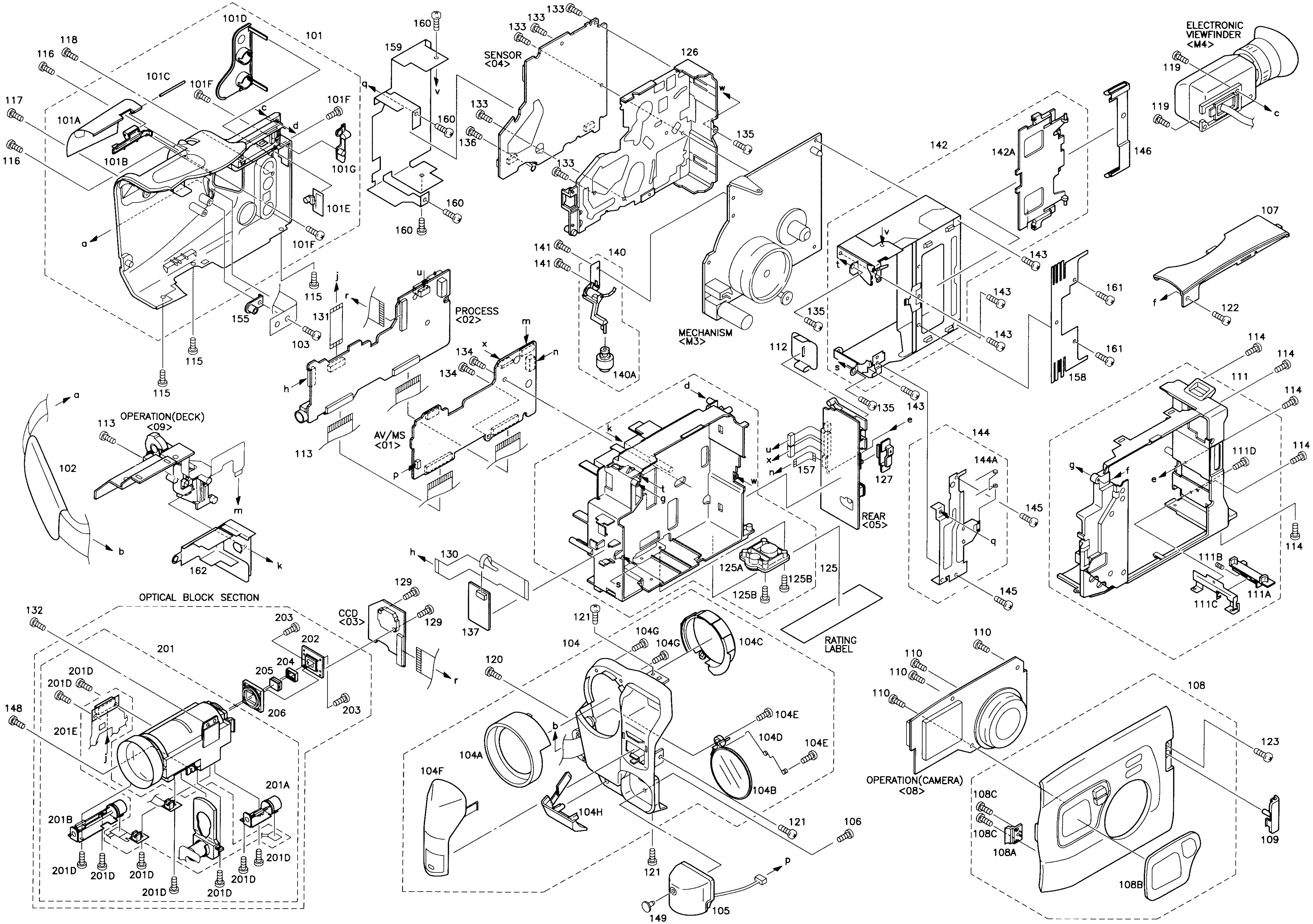
****

PACKING ASSEMBLY <M1>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	1	LY30023-002A	POLY BAG
	2	LY30285-004B	PACKING CASE
	3	LY30286-001A	CUSHION
	4	QPA02003006	POLY BAG
⚠	5	LYT0002-0P7A	INSTRUCTIONS(EN,GE)
⚠		LYT0002-0P8A	INSTRUCTIONS(FR)
⚠		LYT0002-0P9A	INSTRUCTIONS(DU,SP)
⚠		LYT0002-0Q1A	INSTRUCTIONS(IT,DA)
⚠		LYT0002-0Q2A	INSTRUCTIONS(FI,SW)
		LYT0002-0Q3A	INSTRUCTIONS(NO,RU)
⚠	6	PECA0903	LI BATTERY,X2
	7	PEMC1000-01-02	CONNECTOR
	8	PEAC0362-150	CABLE ASSY,AUDIO/VIDEO
	9	PEAC0428-150	CABLE ASSY,EDITING CABLE
	10	QAM0004-003	S CABLE
	11	YS30854A	CABLE ASSY,DC PLUG CORD
	12	YQ10188A-1	S STRAP ASSY
	13	R6PRPA-B	BATTERY
	14	YQ20773Q	REMO.CONTROLLER
	15	YQ31963A-3	CASSETTE ADAPTER ASSY
		or YQ31963B-3	CASSETTE ADAPTER ASSY
	16	LY40069-001A	SPACER
	18	LYT0008-028A	SHEET(APS)

- INSTRUCTIONS
  EN .... ENGLISH
  FR .... FRENCH
  GE .... GERMAN
  DU .... DUTCH
  SP .... SPANISH
  IT .... ITALIAN
  SW .... SWEDISH
  DA .... DANISH
  FI .... FINNISH
  NO .... NORWEGIAN
  RU .... RUSSIAN

5.2 FINAL ASSEMBLY <M2>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MECHANISM
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161
158
f
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114
114
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OPTICAL BLOCK SECTION
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108B

****

FINAL ASSEMBLY <M2>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
⚠ 101	LY10004-036B	LOWER CASE ASSY
101A	LY30103-002B	COVER/D.OPE
101B	LY30106-001C	GUIDE
101C	YQ43795	SHAFT
101D	LY30125-001A	COVER/JACK
101E	LY30107-001A	COVER/CONECT
101F	QYSLSG2040D	SCREW,X3
101G	LY30199-001A	COVER/L-U
102	LY20014-001A	GRIP BELT
103	LY30018-003A	SPECIAL SCREW
104	LY20017-012C	FRONT COVER ASSY
104A	LY30109-001A	HOOD
104B	LY30110-001A	SHUTTER
104C	LY30111-001B	KNOB/SHUTTER
104D	LY40002-001A	TORSION SPRING
104E	YQ43762	SPECIAL SCREW,X2
104F	LY20018-002B	IR WINDOW
104G	QYSLSF2050Z	SCREW,X2
104H	LY30112-001C	JACK COVER
105	LY30145-002B	MICROPHONE
106	QYSLSF2055D	SPECIAL SCREW
107	LY20012-021A	TOP COVER
⚠ 108	LY20019-016C	CASSETTE COVER ASSY
108A	LY30115-001B	HINGE
108B	LY30154-008A	WINDOW
108C	QYSLSF2050D	SCREW,X2
109	LY40023-008A	PUSH BUTTON ASSY
110	QYSLSF2055D	SPECIAL SCREW,X4
⚠ 111	LY10032-002A	UPPER CASE ASSY
111A	YQ32079	KNOB(B.RELEASE)
111B	LY30002-001A	COMPRES. SPRING
111C	LY30165-001A	BKT/B.RELEASE
111D	QYSLSP2030D	SCREW
112	YQ30931-1-4	BATTERY COVER
113	QYSLSF2055D	SPECIAL SCREW
114	QYSLSF2055D	SPECIAL SCREW,X5
115	QYSLSF2055D	SPECIAL SCREW,X3
116	QYSLSF2055D	SPECIAL SCREW,X2
117	QYSLSF1750D	SCREW
118	QYSLSF2055D	SPECIAL SCREW
119	QYSLSG2080D	SCREW,X2
120	QYSLSF2055D	SPECIAL SCREW
121	QYSLSF2055D	SPECIAL SCREW,X3
122	QYSLSF2055D	SPECIAL SCREW
123	QYSLSP2030D	SCREW
⚠ 125	LY20050-004C	FRAME ASSY
125A	YQ31843	BASE
125B	QYSLSF2060D	SCREW,X2
126	LY10003-001B	BKT/B-B
127	LY30121-001B	KNOB/EJECT
129	QYTPSP2006Z	SCREW,X2
130	QAL0005-001	FPC,CAM OPE-PROC CN203
131	PEWR0852	FFC,OP-PROC CN201
132	QYSLSF2055D	SPECIAL SCREW
133	YQ44457-5	SCREW,X5
134	QYSLSF1750D	SCREW,X2
135	QYSLSF1750D	SCREW,X3
136	YQ44457-3	SCREW
137	QAL0023-001	IR SENSOR UNIT
140	YQ44027A-7	CLEANER ASSY
140A	YQ44109A-2	CLEANER ROLLER ASSY
141	YQ44457-3	SCREW,X2
142	YQ31752C-19	CASSETTE HOUSING ASSY
142A	LY20010-001A	C.COVER INSIDE
143	YQ44457-3	SCREW,X4
144	YQ32300B-3	FRONT FRAME ASSY
144A	YQ44144	TAPE GUIDE
145	SPSH1725M	SCREW,X2
146	LY30144-001B	SLIDE PLATE
148	QYSLSG2080D	SCREW
149	YQ43518	CAP(JACK)
155	LY40081-001A	CAP
157	PEWR0860	FFC,AV/MS CN106-REAR CN602
158	YQ32290	SHIELD COVER
159	LY30271-001A	SHIELD PLATE
160	SPSH1725M	SCREW,X4
161	SPSH1720M	SCREW,X2
162	LY30212-001A	SHIELD C. ASSY

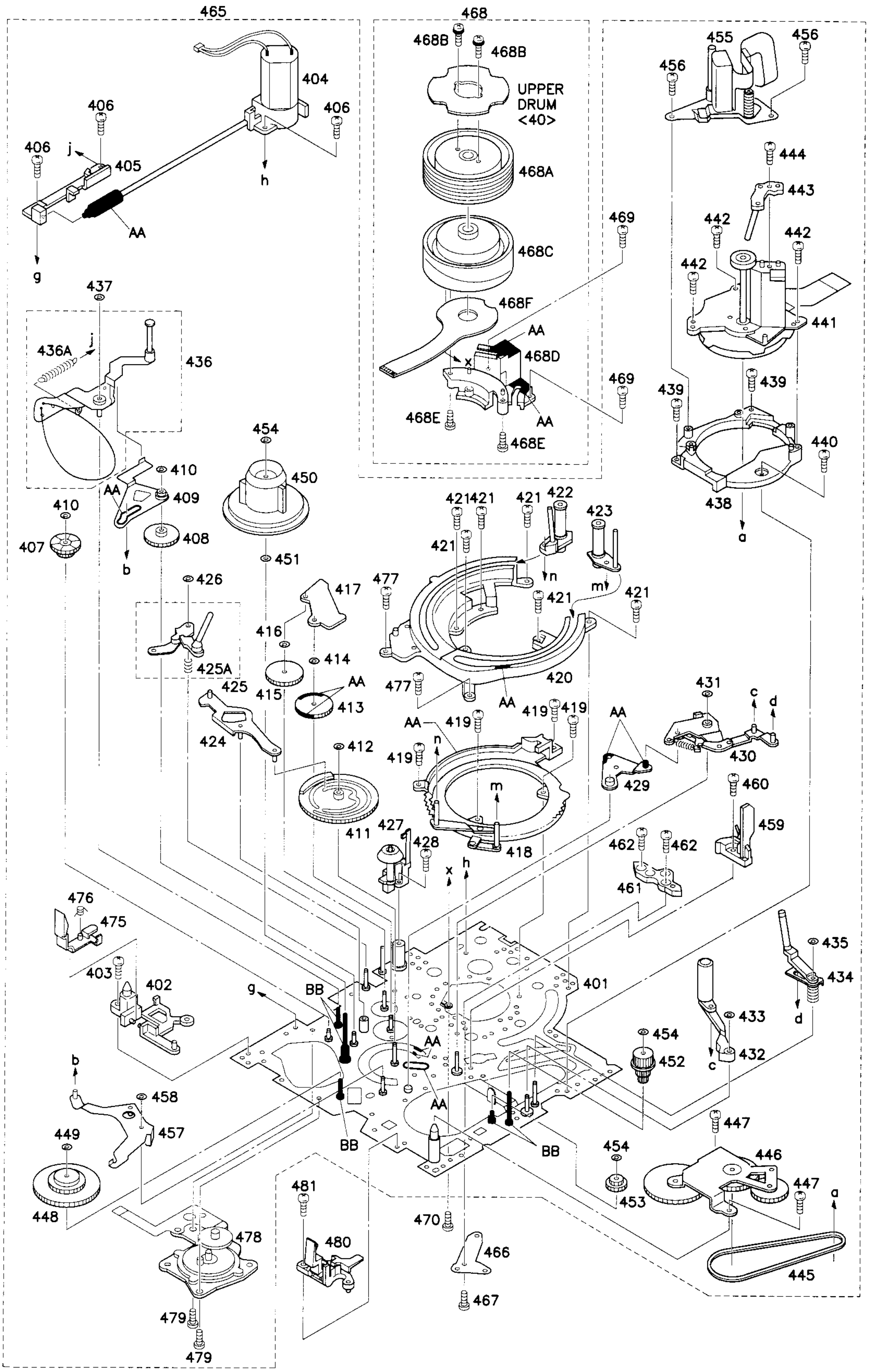
- OPTICAL BLOCK SECTION -

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
201	LY30151-001A	OP BLOCK ASSY
201A	PTY30151-002	FOCUS MOTOR UNIT
201B	PTY30151-001	ZOOM MOTOR UNIT
201D	PTY30151-016	SCREW,X9 M1.7X3.5
201E	PTY30151-006	IRIS UNIT
202	YS40113P	CCD BASE ASSY
203	SPSN2090Z	SCREW,X2
204	YQ31844	SPACER RUBBER
205	LY40054-001A	OP LPF
206	YQ20823	CCD SPACER

5.3 MECHANISM ASSEMBLY <M3>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.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Classifi-cation	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	YTU94027	BB

NOTE: The section marked in **AA** and **BB** indicate lubrication and greasing areas.

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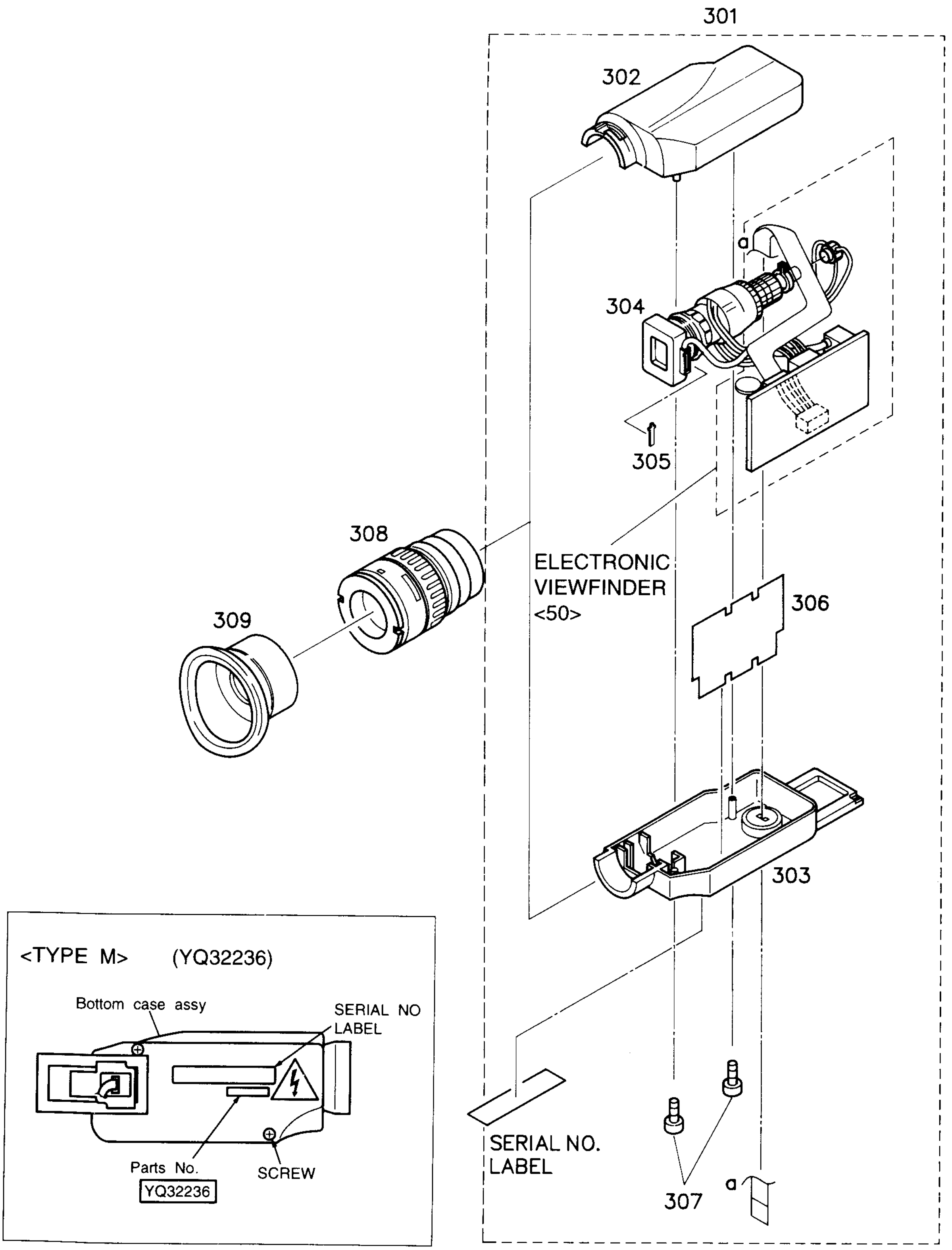
MECHANISM ASSEMBLY <M3>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
401	LY20009-001C	MAIN DECK ASSY
402	YQ32218	CASS.GUIDE(L)
403	YQ44457	SCREW
404	YQ31856A-3	MOTOR BRACKET ASSY
405	YQ20793	WORM BRACKET
406	YQ44457	SCREW,X3
407	YQ31783	WHEEL GEAR
408	YQ44328	MIDDLE GEAR
409	YQ43849B	CANCEL LEVER ASSY
410	PQM30017-27	SLIT WASHER,X2
411	YQ20827-2-1	CONTROL CAM
412	PQM30017-25	SLIT WASHER
413	YQ43853A	LOADING GEAR(T)ASSY
414	PQM30017-27	SLIT WASHER
415	YQ43852A	LOADING GEAR(S)ASSY
416	PQM30017-27	SLIT WASHER
417	YQ43634	COVER PLATE
418	YQ43635C-10	LOADING RING ASSY
419	YQ44457	SCREW,X4
420	YQ10516-1-11	GUIDE RAIL
421	YQ44457-5	SCREW,X6
422	YQ43646A-4	SUPPLY POLE BASE ASSY
423	YQ43654A-11	TAKE-UP POLE BASE ASSY
424	YQ44439A-2	DRIVE LEVER ASSY
425	YQ43663C-7	SLANT ARM ASSY
425A	YQ43670	TOR.SPRING(S)
426	PQM30017-27	SLIT WASHER
427	YQ44436A-3	ROLLER BASE ASSY
428	YQ44457	SCREW
429	YQ32230	LINK LEVER
430	YQ43682B	LINK ARM ASSY
431	PQM30017-25	SLIT WASHER
432	LY40018-001A	PINCH ROLLER ARM ASSY
433	PQM30017-25	SLIT WASHER
434	YQ44591A	TAKE-UP GUIDE ARM ASSY
435	PQM30017-27	SLIT WASHER
436	YQ44199C-7	TENSION ARM ASSY
436A	YQ43848-1-2	TENSION SPRING
437	PQM30017-27	SLIT WASHER
438	YQ20797-1-3	MOTOR BASE
439	YQ44457	SCREW,X2
440	YQ44460	SCREW
441	YU42078-2	CAPSTAN MOTOR
442	YQ44304	TAPPING SCREW,X3
443	YQ43708A-3	SLANT POLE BASE ASSY
444	YQ44304	TAPPING SCREW
445	YQ43710	TIMING BELT
446	YQ43711B-7	CENTER PULLEY UNIT
447	YQ44457-2	SCREW,X2
448	YQ43729A-2	SUPPLY CLUCH ASSY
449	PQM30017-27	SLIT WASHER
450	YQ31861-1-7	REEL DISC
451	Q03093-835	WASHER
452	YQ31787	TAKE-UP GEAR
453	YQ43737	BRAKE SUB GEAR
454	PQM30017-27	SLIT WASHER,X3
455	YQ43738B-11	A/C HEAD UNIT
456	SPSN1750Z	SCREW,X2
457	YQ43743B	EJECT LEVER ASSY
458	PQM30017-27	SLIT WASHER
459	YQ31833-1-1	LED GUIDE
460	YQ44457	SCREW
461	YQ43818	DRUM SPACER
462	YQ44457	SCREW,X2
465	YMA0022A	MECHA(A) ASSY
466	YU42051	BRUSH
467	YQ44457-3	SCREW
468	YDV2082A	DRUM ASSY
468A	YDM2095F	UPPER DRUM ASSY
468B	YDM4031	SCREW,X2
468C	YDM2096B	LOWER DRUM ASSY
468D	YDM1003-1-5	CATCHER
468E	SPSH1730M	SCREW,X2
468F	QAL0008-001	FPC
469	YQ44457	SCREW,X2
470	SPSH1740Z	SCREW
475	YQ32219	SW.LEVER(L)
476	YQ44422-1-1	TORSION SPRING
477	SPSH1730C	SCREW,X2
478	QSW0455-003	ROTARY ENCODER
479	LY40079-001A	SCREW,X2
480	YQ44339A-4	CASS.GUIDE(R)ASSY
481	YQ44457	SCREW

5.4 ELECTRONIC VIEWFINDER ASSEMBLY <M4>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Bottom case assy
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Parts No.
YQ32236
SCREW

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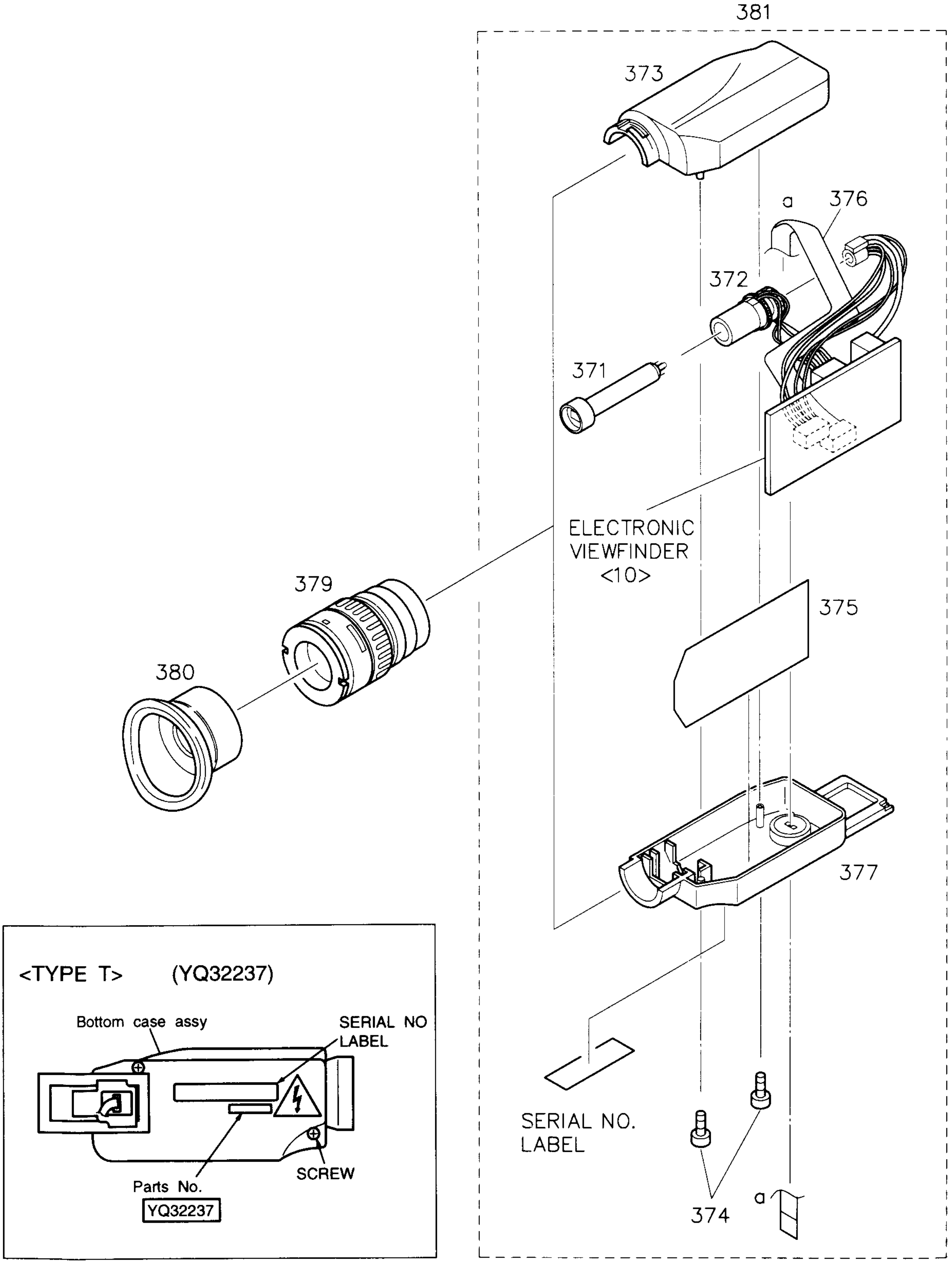
ELECTRONIC VIEWFINDER ASSEMBLY <M4>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	301	YQ32236F	EVF ASSY
⚠	302	YQ32236-001	TOP CASE
⚠	303	YQ32236-102	BOTTOM CASE ASSY
⚠	304	YQ31803-001	CRY/DY ASSY
⚠	305	YU30181-014	HV COVER
⚠	306	YQ31803-100	INSULATOR
	307	YU30045-014	SCREW,X2 M1.7X5
	308	YQ31803-200	LENS ASSY
	309	YQ31803-201	EYE CAP

5.5 ELECTRONIC VIEWFINDER ASSEMBLY <M4>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<TYPE T> (YQ32237)
Bottom case assy
SERIAL NO
LABEL
SCREW
Parts No.
YQ32237

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

* *

ELECTRONIC VIEWFINDER ASSEMBLY <M4>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	⚠	371	PEDP0193	CRT
	⚠	372	PELN1179	DEFLECTION YOKE
	⚠	373	YQ10628-2	TOP CASE
		374	SPSN1750M	SCREW,X2
	⚠	375	YQ44473	INSULATOR
		376	QAL0007-001	FPC
		377	YQ32237-102	BOTTOM CASE ASSY
		379	YQ31803-200	LENS ASSY
		380	YQ31803-201	EYE CAP
	⚠	381	YQ32237F-1	EVF ASSY

5.6 ELECTRICAL PARTS LIST

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AV/MS BOARD ASSEMBLY <01>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PW1	YB10187A1-02	AV/MS BOARD ASSY	
IC1001	M37774M3L602GP	IC	
IC1002	TC74HCT7007AF	IC	
IC1003	MC74HC132ADT	IC(DIGITAL)	
IC2001	BA7751AFS	IC	
IC2002	BA15218F-XE	IC	
IC2003	BA15218F-XE	IC	
IC3001	MM1166XF	IC	
IC3002	JCP0054	IC	
IC3003	TL8850AF	IC	
IC3004	JCY0030-XE	IC	
	or AN3298NSB-WE	IC	
IC3005	M52363VP	IC	
IC3006	MM1024AF	IC	
IC3011	HA118092FP-XE	IC	
Q1001	2SA1774/RS/-X	TRANSISTOR	
Q1002	DTC124EE	TRANSISTOR	
Q1003	DTA124EE	TRANSISTOR	
Q1004	DTC144EE	TRANSISTOR	
Q1201	DTC144EE	TRANSISTOR	
	or UN9213	TRANSISTOR	
Q1202	2SC4617/QR/-X	TRANSISTOR	
Q2001	2SA1774/QR/-X	TRANSISTOR	
Q2002	2SA1774/QR/-X	TRANSISTOR	
Q2003	UMX1N	TRANSISTOR	
Q2004	DTA114EE	TRANSISTOR	
Q2005	DTC144EE	TRANSISTOR	
Q2008	2SC4097/QR/-X	TRANSISTOR	
Q2009	DTC144EE	TRANSISTOR	
Q2010	2SC4617/QR/-X	TRANSISTOR	
Q2011	2SC4617/QR/-X	TRANSISTOR	
Q2012	DTC114EE	TRANSISTOR	
Q2013	2SC4617/QR/-X	TRANSISTOR	
Q2014	2SA1774/QR/-X	TRANSISTOR	
Q2015	2SC4617/QR/-X	TRANSISTOR	
Q2019	2SC4617/QR/-X	TRANSISTOR	
Q2021	2SC4617/QR/-X	TRANSISTOR	
Q2022	DTA114EE	TRANSISTOR	
Q2023	2SK621	FE TRANSISTOR	
Q2024	DTC144EE	TRANSISTOR	
Q2025	DTC144EE	TRANSISTOR	
Q2026	2SC4617/QR/-X	TRANSISTOR	
Q3006	DTC144EE	TRANSISTOR	
Q3007	DTC144EE	TRANSISTOR	
Q3008	2SA1774/QR/-X	TRANSISTOR	
Q3009	2SA1774/QR/-X	TRANSISTOR	
Q3010	DTC114EE	TRANSISTOR	
Q3011	2SC4617/QR/-X	TRANSISTOR	
Q3012	2SC4617/QR/-X	TRANSISTOR	
Q3013	2SC4617/QR/-X	TRANSISTOR	
Q3014	2SC4617/QR/-X	TRANSISTOR	
Q3015	2SA1774/QR/-X	TRANSISTOR	
Q3016	DTC144EE	TRANSISTOR	
Q3017	DTA144EE	TRANSISTOR	
Q3018	DTC144EE	TRANSISTOR	
Q3019	2SC4617/QR/-X	TRANSISTOR	
Q3020	2SA1774/QR/-X	TRANSISTOR	
Q3021	2SC4617/QR/-X	TRANSISTOR	
Q3022	DTC144EE	TRANSISTOR	
Q3023	2SC4617/QR/-X	TRANSISTOR	
Q3024	2SA1774/QR/-X	TRANSISTOR	
Q3025	UMX1N	TRANSISTOR	
Q3026	2SC4617/QR/-X	TRANSISTOR	
Q3027	DTC144EE	TRANSISTOR	
Q3028	DTC144EE	TRANSISTOR	
Q3029	DTC144EE	TRANSISTOR	
Q3031	UMX1N	TRANSISTOR	
Q3032	2SA1577/QR/-X	TRANSISTOR	
Q3033	2SA1774/QR/-X	TRANSISTOR	
Q3035	2SC4617/QR/-X	TRANSISTOR	
D1002	DAN222	DIODE	
D1003	1SS355	DIODE	
D1004	1SS355	DIODE	
D2001	DAN222	DIODE	
D3001	DAN222	DIODE	
D3002	DAN222	DIODE	
D3006	DAP222	DIODE	
D3007	DAP222	DIODE	
R1002	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R1003	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R1004	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1006	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1007	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1010	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R1011	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R1012	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W
R1013	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W
R1014	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
R1015	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R1016	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1017	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R1018	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R1019	NRSA63J-183X	MG RESISTOR	18kΩ,1/16W
R1021	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1025	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R1026	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R1027	NRSA63J-122X	MG RESISTOR	1.2kΩ,1/16W
R1028	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1029	NRSA63J-751X	MG RESISTOR	750Ω,1/16W
R1030	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1031	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1032	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R1033	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R1034	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R1036	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1037	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R1047	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1201	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1202	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1203	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1204	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1205	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1207	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R1208	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R1209	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R1210	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R1211	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1212	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R1213	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1214	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2001	NRVA63D-432X	CMF RESISTOR	4.3kΩ,1/16W
R2002	NRSA63J-3R3X	MG RESISTOR	3.3Ω,1/16W
R2003	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R2004	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R2005	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R2006	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R2008	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
R2009	NRVA63D-822X	CMF RESISTOR	8.2kΩ,1/16W
R2010	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R2011	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R2012	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R2013	NRSA63J-132X	MG RESISTOR	1.3kΩ,1/16W
R2015	NRSA63J-822X	MG RESISTOR	8.2kΩ,1/16W
R2016	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R2018	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R2019	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R2021	NRSA63J-133X	MG RESISTOR	13kΩ,1/16W
R2022	NRSA63J-334X	MG RESISTOR	330kΩ,1/16W
R2023	NRSA63J-470X	MG RESISTOR	47Ω,1/16W
R2024	NRSA63J-155X	MG RESISTOR	1.5MΩ,1/16W
R2025	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2026	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R2027	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2029	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2030	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R2031	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R2032	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R2033	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
R2034	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2036	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2037	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R2038	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2039	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R2040	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2042	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2043	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R2044	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R2045	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R2046	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2047	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R2048	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R2049	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R2055	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2062	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2063	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2064	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R2065	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R2067	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R2068	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2071	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R2072	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R2073	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R2074	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R2077	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R2078	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R2079	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R2080	NRSA63J-334X	MG RESISTOR	330kΩ,1/16W
R2081	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2082	NRVA63D-683X	CMF RESISTOR	68kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R2083	NRVA63D-473X	CMF RESISTOR	47kΩ,1/16W
R2084	NRVA63D-473X	CMF RESISTOR	47kΩ,1/16W
R2085	NRVA63D-124X	CMF RESISTOR	120kΩ,1/16W
R2086	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R2087	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R2088	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R2089	NRSA63J-335X	MG RESISTOR	3.3MΩ,1/16W
R2090	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2093	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3007	NRSA63J-225X	MG RESISTOR	2.2MΩ,1/16W
R3010	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3011	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3012	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3013	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3014	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3015	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R3016	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3017	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R3018	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R3019	NRSA63J-224X	MG RESISTOR	220kΩ,1/16W
R3020	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3021	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3022	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3023	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R3024	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3025	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R3026	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R3027	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3033	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3036	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3037	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3038	NRSA63J-122X	MG RESISTOR	1.2kΩ,1/16W
R3039	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3041	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3042	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3043	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R3044	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3045	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
R3046	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3047	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3049	NRSA63J-151X	MG RESISTOR	150Ω,1/16W
R3051	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3053	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3054	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3055	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
R3057	NRSA63J-121X	MG RESISTOR	120Ω,1/16W
R3058	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
R3059	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
R3060	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3062	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3063	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R3064	NRSA63J-151X	MG RESISTOR	150Ω,1/16W
R3065	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3066	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3068	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3069	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3070	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3071	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3072	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R3073	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
R3076	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R3077	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R3078	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3079	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3080	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3081	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R3082	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R3083	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3084	NRSA63J-912X	MG RESISTOR	9.1kΩ,1/16W
R3085	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R3087	NRSA63J-183X	MG RESISTOR	18kΩ,1/16W
R3088	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R3089	NRSA63J-183X	MG RESISTOR	18kΩ,1/16W
R3090	NRSA63J-822X	MG RESISTOR	8.2kΩ,1/16W
R3091	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3092	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R3093	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R3094	NRSA63J-151X	MG RESISTOR	150Ω,1/16W
R3095	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3096	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3097	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R3098	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3099	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R3100	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3102	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R3103	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
R3104	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
R3105	NRSA63J-121X	MG RESISTOR	120Ω,1/16W
R3106	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3107	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3108	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R3109	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3110	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3111	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3112	NRSA63J-822X	MG RESISTOR	8.2kΩ,1/16W
R3113	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R3114	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R3115	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R3117	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3118	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3119	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3120	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3121	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3122	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3123	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3124	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3125	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3126	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R3128	NRSA63J-112X	MG RESISTOR	1.1kΩ,1/16W
R3129	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3130	NRSA63J-121X	MG RESISTOR	120Ω,1/16W
R3131	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R3132	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R3133	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R3134	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3135	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R3136	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R3137	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3138	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3139	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3140	NRSA63J-225X	MG RESISTOR	2.2MΩ,1/16W
R3142	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R3144	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R3145	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3146	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3147	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3148	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3149	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R3150	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R3151	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R3152	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R3153	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R3154	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R3155	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3162	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3164	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R3165	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3166	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3167	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R3168	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3169	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3170	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3171	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3172	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3173	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R3174	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R3175	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R3177	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
R3178	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
R3179	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
RA1002	NRZ0012-222X	NETWORK RESISTOR	2.2kΩ
RA1003	NRZ0012-103X	NETWORK RESISTOR	10kΩ
RA1004	NRZ0015-222X	NETWORK RESISTOR	2.2kΩ
RA1005	NRZ0015-103X	NETWORK RESISTOR	10kΩ
RA1006	NRZ0012-102X	NETWORK RESISTOR	1kΩ
RA1007	NRZ0015-222X	NETWORK RESISTOR	2.2kΩ
RA1201	NRZ0015-102X	NETWORK RESISTOR	1kΩ
C1001	NDC31HJ-100X	CAPACITOR	10pF,50V
C1002	NDC31HJ-120X	CAPACITOR	12pF,50V
C1005	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1006	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1007	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1008	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1009	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1010	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1011	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1202	NCF21CZ-474X	CAPACITOR	0.47μF,16V
C1204	NCB31CK-333X	CAPACITOR	0.033μF,16V
C1205	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C1206	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1207	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C1208	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C1209	NBE21CM-105X	T CAPACITOR	1μF,16V
C1210	NBE21CM-105X	T CAPACITOR	1μF,16V
C1212	NCB31HK-222X	CAPACITOR	0.0022μF,50V
C1213	NCB31CK-473X	CAPACITOR	0.047μF,16V
C1214	NEA71HM-335X	E CAPACITOR	3.3μF,50V
C1215	NDC31HJ-101X	CAPACITOR	100pF,50V
C1216	NBE21CM-105X	T CAPACITOR	1μF,16V
C1218	NBE21AM-225X	T CAPACITOR	2.2μF,10V
C2001	NDC31HJ-331X	CAPACITOR	330pF,50V
C2002	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C2003	NCF21CZ-105X	CAPACITOR	1μF,16V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C2004	NCB31HK-152X	CAPACITOR	0.0015μF,50V
C2006	NCB31HK-152X	CAPACITOR	0.0015μF,50V
C2007	NCB31HK-681X	CAPACITOR	680pF,50V
C2008	NBE21CM-105X	T CAPACITOR	1μF,16V
C2009	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2010	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C2012	NBE21CM-105X	T CAPACITOR	1μF,16V
C2013	NCB21EK-683X	CAPACITOR	0.068μF,25V
C2015	NCB31HK-682X	CAPACITOR	0.0068μF,50V
C2016	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C2017	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C2018	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C2019	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C2020	NCB11CK-105X	CAPACITOR	1μF,16V
C2021	NCB31EK-223X	CAPACITOR	0.022μF,25V
C2022	NBE21EM-474X	T CAPACITOR	0.47μF,25V
C2024	NDC31HJ-331X	CAPACITOR	330pF,50V
C2025	NCB31CK-104X	CAPACITOR	0.1μF,16V
C2026	NFV41HJ-273X	MPPS CAPACITOR	0.027μF,50V
C2027	NDC31HJ-471X	CAPACITOR	470pF,50V
C2028	NCB31HK-682X	CAPACITOR	0.0068μF,50V
C2029	NBE41AM-226X	T CAPACITOR	22μF,10V
C2030	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C2031	NBE21EM-474X	T CAPACITOR	0.47μF,25V
C2032	NCB31EK-123X	CAPACITOR	0.012μF,25V
C2039	NDC31HJ-331X	CAPACITOR	330pF,50V
C2041	NCB31EK-223X	CAPACITOR	0.022μF,25V
C2071	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C2072	NEA70JM-107X	E CAPACITOR	100μF,6.3V
C2073	NEA71CM-106X	E CAPACITOR	10μF,16V
C2074	NEA71CM-106X	E CAPACITOR	10μF,16V
C2076	NCB31CK-333X	CAPACITOR	0.033μF,16V
C2077	NCF21CZ-105X	CAPACITOR	1μF,16V
C2078	NCF21CZ-105X	CAPACITOR	1μF,16V
C2079	NCB31CK-473X	CAPACITOR	0.047μF,16V
C2081	NCF21CZ-105X	CAPACITOR	1μF,16V
C3002	NEA71HM-225X	E CAPACITOR	2.2μF,50V
C3003	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3005	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3006	NCB21AK-105X	CAPACITOR	1μF,10V
C3007	NCB31EK-153X	CAPACITOR	0.015μF,25V
C3008	NEA71EM-475X	E CAPACITOR	4.7μF,25V
C3009	NCB21CK-474X	CAPACITOR	0.47μF,16V
C3010	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3011	NEA71HM-225X	E CAPACITOR	2.2μF,50V
C3012	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3013	NEA71CM-106X	E CAPACITOR	10μF,16V
C3014	NDC31HJ-2R0X	CAPACITOR	2pF,50V
C3015	NDC31HJ-330X	CAPACITOR	33pF,50V
C3017	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3018	NCB21AK-105X	CAPACITOR	1μF,10V
C3020	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3021	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3022	NCB21CK-224X	CAPACITOR	0.22μF,16V
C3023	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3024	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3025	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3026	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3027	NCF21AZ-225X	CAPACITOR	2.2μF,10V
C3028	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3029	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3030	NEA71CM-106X	E CAPACITOR	10μF,16V
C3031	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C3032	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3034	NEA71CM-106X	E CAPACITOR	10μF,16V
C3035	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3036	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3037	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3038	NEA71CM-106X	E CAPACITOR	10μF,16V
C3039	NEA71CM-106X	E CAPACITOR	10μF,16V
C3040	NEA71CM-106X	E CAPACITOR	10μF,16V
C3041	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3042	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3043	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3044	NCB21AK-105X	CAPACITOR	1μF,10V
C3045	NCB21CK-474X	CAPACITOR	0.47μF,16V
C3046	NCB21AK-105X	CAPACITOR	1μF,10V
C3047	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3048	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3049	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3050	NDC31HJ-471X	CAPACITOR	470pF,50V
C3051	NDC31HJ-330X	CAPACITOR	33pF,50V
C3052	NDC31HJ-470X	CAPACITOR	47pF,50V
C3053	NDC31HJ-151X	CAPACITOR	150pF,50V
C3054	NDC31HJ-100X	CAPACITOR	10pF,50V
C3055	NCB31EK-223X	CAPACITOR	0.022μF,25V
C3056	NEAB0JM-107X	E CAPACITOR	100μF,6.3V
C3057	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3058	NCB31AK-224X	CAPACITOR	0.22μF,10V
C3060	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3061	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C3062	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3063	NCB31AK-224X	CAPACITOR	0.22μF,10V
C3064	NDC31HJ-391X	CAPACITOR	390pF,50V
C3065	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3067	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3068	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C3069	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3070	NCB21AK-105X	CAPACITOR	1μF,10V
C3071	NBE41AM-226X	T CAPACITOR	22μF,10V
C3072	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3073	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3074	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C3075	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3076	NBE21CM-105X	T CAPACITOR	1μF,16V
C3077	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3078	NDC31HJ-101X	CAPACITOR	100pF,50V
C3080	NDC31HJ-330X	CAPACITOR	33pF,50V
C3081	NDC31HJ-100X	CAPACITOR	10pF,50V
C3082	NDC31HJ-330X	CAPACITOR	33pF,50V
C3085	NDC31HJ-151X	CAPACITOR	150pF,50V
C3086	NDC31HJ-820X	CAPACITOR	82pF,50V
C3088	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3089	NBE41AM-226X	T CAPACITOR	22μF,10V
C3090	NCB21AK-105X	CAPACITOR	1μF,10V
C3091	NCB21AK-105X	CAPACITOR	1μF,10V
C3092	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3096	NDC31HJ-221X	CAPACITOR	220pF,50V
C3097	NDC31HJ-470X	CAPACITOR	47pF,50V
C3098	NDC31HJ-680X	CAPACITOR	68pF,50V
C3099	NDC31HJ-150X	CAPACITOR	15pF,50V
C3100	NDC31HJ-221X	CAPACITOR	220pF,50V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C3101	NDC31HJ-470X	CAPACITOR	47pF,50V
C3102	NEA71EM-475X	E CAPACITOR	4.7μF,25V
C3103	NDC31HJ-220X	CAPACITOR	22pF,50V
C3104	NDC31HJ-220X	CAPACITOR	22pF,50V
C3105	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3106	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3107	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3108	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3109	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3110	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3111	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3112	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3113	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3114	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C3115	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3116	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3118	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3119	NDC31HJ-101X	CAPACITOR	100pF,50V
C3120	NDC31HJ-220X	CAPACITOR	22pF,50V
C3121	NCB31HK-122X	CAPACITOR	0.0012μF,50V
C3122	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3123	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C3124	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3125	NDC31HJ-330X	CAPACITOR	33pF,50V
C3126	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3127	NDC31HJ-680X	CAPACITOR	68pF,50V
C3128	NDC31HJ-101X	CAPACITOR	100pF,50V
C3129	NDC31HJ-270X	CAPACITOR	27pF,50V
C3130	NCB31HK-122X	CAPACITOR	0.0012μF,50V
C3132	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3133	NDC31HJ-3R0X	CAPACITOR	3pF,50V
C3135	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3136	NDC31HJ-220X	CAPACITOR	22pF,50V
C3137	NDC31HJ-680X	CAPACITOR	68pF,50V
C3138	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3139	NDC31HJ-680X	CAPACITOR	68pF,50V
C3140	NDC31HJ-150X	CAPACITOR	15pF,50V
C3141	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3142	NCB31EK-223X	CAPACITOR	0.022μF,25V
C3143	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C3144	NCB31HK-681X	CAPACITOR	680pF,50V
C3145	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3148	NDC31HJ-331X	CAPACITOR	330pF,50V
C3149	NDC31HJ-221X	CAPACITOR	220pF,50V
C3150	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3151	NEA71HM-225X	E CAPACITOR	2.2μF,50V
C3153	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3154	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3155	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C3156	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3158	NCB21AK-105X	CAPACITOR	1μF,10V
C3159	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3160	NDC31HJ-101X	CAPACITOR	100pF,50V
C3171	NDC31HJ-101X	CAPACITOR	100pF,50V
C3172	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3173	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3174	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3175	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C3176	NCB31EK-223X	CAPACITOR	0.022μF,25V
C3177	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3178	NCB31EK-103X	CAPACITOR	0.01μF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C3179	NEA71CM-106X	E CAPACITOR	10μF,16V
C3180	NEA71CM-106X	E CAPACITOR	10μF,16V
C3181	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3182	NCB31EK-103X	CAPACITOR	0.01μF,25V
L2001	NQR0002-001X	BIAS COIL	
L2002	NQL164K-101X	COIL	100μH
L3002	NQL184J-820X	COIL	82μH
L3003	NQL144K-470X	COIL	47μH
L3004	NQL144K-470X	COIL	47μH
L3005	NQL184J-150X	COIL	15μH
L3006	NQL144K-470X	COIL	47μH
L3007	NQL144K-470X	COIL	47μH
L3009	NQL184J-100X	COIL	10μH
L3010	NQL184J-120X	COIL	12μH
L3011	NQL184J-220X	COIL	22μH
L3012	NQL184J-390X	COIL	39μH
L3014	NQL184K-8R2X	COIL	8.2μH
L3015	NQL184J-150X	COIL	15μH
L3016	NQL144K-470X	COIL	47μH
L3017	NQL184J-220X	COIL	22μH
L3018	NQL184J-100X	COIL	10μH
L3019	NQL184J-390X	COIL	39μH
L3020	NQL144K-470X	COIL	47μH
L3021	NQL184J-560X	COIL	56μH
L3022	NQL184K-5R6X	COIL	5.6μH
L3023	NQL184J-560X	COIL	56μH
L3024	NQL184J-820X	COIL	82μH
L3025	PU57620-821J	COIL	820μH
L3026	PU57620-102J	COIL	1mH
L3027	NQL184J-331X	COIL	330μH
L3030	NQL144K-470X	COIL	47μH
L3041	NQL144K-470X	COIL	47μH
FL3002	PELN1015-Z	EQUALIZER	
X1001	QAX0009-001	CRYSTAL RESONATOR	
X3001	PEVB0550	CRYSTAL RESONATOR	
CN101	PEMC1201-050-R	CONNECTOR	
CN102	PEWR0836	LEAD BUS CONN	
CN103	PEWR0836	LEAD BUS CONN	
CN104	PEMC1073-007-R	CONNECTOR	
CN105	QGF0502F1-13X	FPC CONNE	
CN106	QGF0503C1-08X	FPC CONNE	
CN107	QGF0502F1-11X	FPC CONNE	
CN108	YU41356-4-R	CONNECTOR	
CN201	QGF0502F1-22X	FPC CONNE	
CN202	PEWR0835	LEAD BUS CONN	
CN203	QGF0502F1-22X	FPC CONNE	

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PROCESS BOARD ASSEMBLY <02>

PW2	YB10187A2-02	PROCESS BOARD ASSY
IC51	MM1117XF	IC
IC101	MN1021213JZL	IC
IC102	UPD6461GS-916-X	IC
	or UPD6461GS-909-X	IC
IC103	RS5C314	IC
IC104	AT25040N-10SC-X	IC
	or NM25C040LZEM8	IC

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
	or X25040S-2.7-X	IC	
IC106	TC7S04FU	IC	
IC107	PST9129N	IC	
IC108	TC7S08F	IC(DIGITAL)	
IC109	MC74HC08ADT	IC(DIGITAL)	
IC110	MB88344BLPFV	IC	
IC111	XC62AP3302P	IC	
IC4001	MN65761T	IC	
IC4002	TC7SH08FU	IC(DIGITAL)	
IC4201	JCY0062	IC	
IC4202	JCY0046	IC	
IC4204	TC7SH08FU	IC(DIGITAL)	
IC4205	RH5RL33AA-XE	IC	
IC4206	MM1320AN	IC	
IC4207	TC7SH08FU	IC(DIGITAL)	
IC4208	MM1320AN	IC	
IC4401	AN2458SH	IC	
IC4402	EHDGA1489	PWB MODULE	
IC4801	TB6504F	IC	
IC4802	TB6504F	IC	
IC4803	TC74HCT7007AF	IC	
IC4901	NJM3414AV	IC	
IC4902	BA10324AF	IC	
IC4903	TC7S08F	IC(DIGITAL)	
Q102	2SC4617/QR/-X	TRANSISTOR	
Q103	2SA1774/RS/-X	TRANSISTOR	
Q104	DTC144EE	TRANSISTOR	
Q106	DTA114EE	TRANSISTOR	
Q107	DTC144EE	TRANSISTOR	
Q108	DTC144EE	TRANSISTOR	
Q4001	2SC4738/Y/-X	TRANSISTOR	
Q4201	2SA1832/Y/-X	TRANSISTOR	
Q4202	2SA1832/Y/-X	TRANSISTOR	
Q4203	2SC4738/Y/-X	TRANSISTOR	
Q4204	2SC4738/Y/-X	TRANSISTOR	
Q4205	2SA1832/Y/-X	TRANSISTOR	
Q4207	2SC4738/Y/-X	TRANSISTOR	
Q4208	2SC4738/Y/-X	TRANSISTOR	
Q4209	2SC4738/Y/-X	TRANSISTOR	
Q4401	XP4601	TRANSISTOR	
Q4402	2SC4738/Y/-X	TRANSISTOR	
Q4801	DTC143ZE	TRANSISTOR	
Q4802	DTC143ZE	TRANSISTOR	
Q4901	2SC4617/QR/-X	TRANSISTOR	
Q4902	2SC4617/QR/-X	TRANSISTOR	
Q4903	2SC4617/QR/-X	TRANSISTOR	
Q4904	2SC4617/QR/-X	TRANSISTOR	
Q4905	DTC144EE	TRANSISTOR	
Q4906	2SB1218A/QR/-X	TRANSISTOR	
D41	MA8068	ZENER DIODE	
D51	DAN222	DIODE	
D101	RD6.8M/B1/-X	ZENER DIODE	
⚠ D102	MA704WK	SB DIODE	
R41	NRSA02J-680X	MG RESISTOR	68Ω,1/10W
R43	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R44	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R45	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
R46	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
R47	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R51	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R52	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R53	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
R54	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
R101	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R102	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R103	NRVA63D-153X	CMF RESISTOR	15kΩ,1/16W
R104	NRVA63D-153X	CMF RESISTOR	15kΩ,1/16W
R106	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
R108	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R109	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R110	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R113	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R114	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R115	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R116	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R117	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R118	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R119	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R120	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R121	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R122	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R123	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R124	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R125	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R126	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R127	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R128	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R129	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R130	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R132	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R133	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R136	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R137	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R138	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R139	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R140	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R141	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R142	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R143	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R144	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R145	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R146	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W
R147	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R148	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R149	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R150	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R151	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R152	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R153	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R154	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R155	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R156	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R157	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R158	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R159	NRSA63J-124X	MG RESISTOR	120kΩ,1/16W
R160	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R161	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R162	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R163	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R164	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R165	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R166	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R167	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R168	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R172	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R175	NRVA63D-153X	CMF RESISTOR	15kΩ,1/16W
R176	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2191	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R4001	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4002	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4003	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4008	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4009	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
R4202	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4203	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4204	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4205	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4206	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4207	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R4209	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R4210	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4211	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R4214	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R4215	NRSA63J-242X	MG RESISTOR	2.4kΩ,1/16W
R4217	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R4219	NRVA63D-112X	CMF RESISTOR	1.1kΩ,1/16W
R4221	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4223	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R4226	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R4227	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4228	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R4232	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4234	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4235	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R4237	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R4238	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4239	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R4240	NRSA63J-112X	MG RESISTOR	1.1kΩ,1/16W
R4241	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4242	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4243	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R4244	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4245	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4401	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4402	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R4403	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R4405	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4406	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R4407	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R4408	NRSA63J-203X	MG RESISTOR	20kΩ,1/16W
R4409	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4410	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4411	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4414	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R4415	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R4417	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4419	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4421	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
R4422	NRSA63J-203X	MG RESISTOR	20kΩ,1/16W
R4423	NRSA63J-242X	MG RESISTOR	2.4kΩ,1/16W
R4424	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4425	NRVA63D-123X	CMF RESISTOR	12kΩ,1/16W
R4426	NRVA63D-682X	CMF RESISTOR	6.8kΩ,1/16W
R4427	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R4428	NRSA63J-202X	MG RESISTOR	2kΩ,1/16W
R4429	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4430	NRSA63J-202X	MG RESISTOR	2kΩ,1/16W
R4431	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4801	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R4802	NRSA63J-4R3X	MG RESISTOR	4.3Ω,1/16W
R4803	NRSA63J-4R3X	MG RESISTOR	4.3Ω,1/16W
R4804	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R4805	NRSA63J-5R1X	MG RESISTOR	5.1Ω,1/16W
R4806	NRSA63J-5R1X	MG RESISTOR	5.1Ω,1/16W
R4807	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4808	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4809	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4810	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4811	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4812	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4813	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R4814	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
R4815	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W
R4816	NRSA63J-822X	MG RESISTOR	8.2kΩ,1/16W
R4817	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R4901	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4902	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
R4903	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4904	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4905	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R4907	NRSA63J-243X	MG RESISTOR	24kΩ,1/16W
R4908	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R4909	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R4911	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R4912	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R4913	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R4914	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R4915	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4916	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R4917	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R4918	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R4919	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R4920	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R4921	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R4922	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R4923	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4924	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R4925	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
R4926	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4927	NRSA63J-334X	MG RESISTOR	330kΩ,1/16W
R4928	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R4929	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4930	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4931	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R4932	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R4933	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
RA4001	NRZ0015-102X	NETWORK RESISTOR	1kΩ
RA4002	NRZ0015-102X	NETWORK RESISTOR	1kΩ
RA4201	NRZ0015-102X	NETWORK RESISTOR	1kΩ
RA4202	NRZ0015-102X	NETWORK RESISTOR	1kΩ
RA4203	NRZ0015-102X	NETWORK RESISTOR	1kΩ
C41	NEA50GM-337X	E CAPACITOR	330µF,4.0V
C43	NEA50GM-337X	E CAPACITOR	330µF,4.0V
C44	NCF31CZ-104X	CAPACITOR	0.1µF,16V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C51	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C52	NCB31EK-103X	CAPACITOR	0.01μF,25V
C53	NEA71HM-105X	E CAPACITOR	1μF,50V
C101	NCB31EK-103X	CAPACITOR	0.01μF,25V
C102	NBE40JM-226X	T CAPACITOR	22μF,6.3V
C103	NDC31HJ-180X	CAPACITOR	18pF,50V
C104	NCB31CK-104X	CAPACITOR	0.1μF,16V
C105	NCB31EK-103X	CAPACITOR	0.01μF,25V
C108	NCB31EK-103X	CAPACITOR	0.01μF,25V
C109	NDC31HJ-101X	CAPACITOR	100pF,50V
C110	NDC31HJ-101X	CAPACITOR	100pF,50V
C111	NCB31EK-103X	CAPACITOR	0.01μF,25V
C112	NCB31EK-103X	CAPACITOR	0.01μF,25V
C113	NDC31HJ-121X	CAPACITOR	120pF,50V
C115	NDC31HJ-151X	CAPACITOR	150pF,50V
C116	NCB31HK-472X	CAPACITOR	0.0047μF,50V
C117	NCB31HK-102X	CAPACITOR	0.001μF,50V
C118	NCB31HK-102X	CAPACITOR	0.001μF,50V
C119	NCB31HK-102X	CAPACITOR	0.001μF,50V
C120	NCB31HK-102X	CAPACITOR	0.001μF,50V
C121	NCB31EK-103X	CAPACITOR	0.01μF,25V
C122	NCB31EK-103X	CAPACITOR	0.01μF,25V
C123	NCB31EK-103X	CAPACITOR	0.01μF,25V
C124	NCB31EK-103X	CAPACITOR	0.01μF,25V
C125	NCB31HK-102X	CAPACITOR	0.001μF,50V
C126	NCB31HK-102X	CAPACITOR	0.001μF,50V
C127	NCB31HK-102X	CAPACITOR	0.001μF,50V
C128	NCB31HK-102X	CAPACITOR	0.001μF,50V
C130	NEA71CM-106X	E CAPACITOR	10μF,16V
C131	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2193	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C4001	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4002	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4003	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4004	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4005	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4006	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4007	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4008	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4009	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4010	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4011	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4012	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4013	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4014	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4015	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4201	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4202	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4203	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4204	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4205	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4206	NCB11CK-105X	CAPACITOR	1μF,16V
C4207	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4208	NCB21AK-105X	CAPACITOR	1μF,10V
C4209	NCB11CK-105X	CAPACITOR	1μF,16V
C4210	NCB11CK-105X	CAPACITOR	1μF,16V
C4211	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4212	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C4213	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C4214	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4215	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4216	NCB21CK-474X	CAPACITOR	0.47μF,16V
C4217	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4218	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4219	NBE21EM-474X	T CAPACITOR	0.47μF,25V
C4220	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4222	NBE21EM-105X	T CAPACITOR	1μF,25V
C4223	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4224	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4225	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4226	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4230	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4231	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4232	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4234	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4237	NDC31HJ-101X	CAPACITOR	100pF,50V
C4238	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4239	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4240	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4241	NCB21AK-105X	CAPACITOR	1μF,10V
C4242	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4243	NDC31HJ-101X	CAPACITOR	100pF,50V
C4244	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C4245	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C4401	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4402	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4403	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4404	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4405	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4406	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4407	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4408	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4409	NDC31HJ-101X	CAPACITOR	100pF,50V
C4410	NDC31HJ-101X	CAPACITOR	100pF,50V
C4411	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4412	NCB31CK-473X	CAPACITOR	0.047μF,16V
C4413	NDC31HJ-100X	CAPACITOR	10pF,50V
C4414	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4415	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4416	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4417	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4418	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4419	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4420	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4421	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C4422	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4801	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4802	NBE41CM-106X	T CAPACITOR	10μF,16V
C4805	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C4806	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C4808	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C4811	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C4812	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C4814	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C4815	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4816	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4817	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4901	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4902	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4903	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4905	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4907	NCB21EK-104X	CAPACITOR	0.1μF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C4908	NCB21EK-104X	CAPACITOR	0.1μF,25V
C4910	NCF21CZ-105X	CAPACITOR	1μF,16V
C4911	NCF21CZ-105X	CAPACITOR	1μF,16V
C4913	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5005	NBE21EM-105X	T CAPACITOR	1μF,25V
C5006	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5007	NCB31HK-152X	CAPACITOR	0.0015μF,50V
C5008	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5009	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5010	NBE41VM-105X	T CAPACITOR	1μF,35V
C5011	NCB21EK-104X	CAPACITOR	0.1μF,25V
L51	NQL144K-470X	COIL	47μH
L101	NQLZ001-8R2X	COIL	8.2μH
L102	NQL164K-220X	COIL	22μH
L2191	NQL184M-1R0X	COIL	1μH
L2193	NQL184M-1R0X	COIL	1μH
L4001	NQL144K-101X	COIL	100μH
L4002	NQL144K-101X	COIL	100μH
L4201	NQL144K-101X	COIL	100μH
L4202	NQL144K-101X	COIL	100μH
L4203	NQL144K-101X	COIL	100μH
L4204	NQL144K-101X	COIL	100μH
L4401	NQL144K-101X	COIL	100μH
L4801	NQL164K-220X	COIL	22μH
L4802	NQL144K-101X	COIL	100μH
L4803	NQL144K-101X	COIL	100μH
L4901	NQL164K-470X	COIL	47μH
FL4201	NQR0164-001X	LOW PASS FILTER	
FL4202	NQR0163-001X	EQUALIZER	
FL4401	NQR0019-001X	BAND PASS FILTER	
X101	NAX0006-001X	C OSCILLATOR	
X102	QAX0008-001	CRYSTAL RESONATOR	
J41	PEMC1203	MINI JACK	
J42	PEMC1188	JACK BOARD	
J43	QND0001-001	S JACK	
CN204	PEMC1209-007-R	CONNECTOR	
CN206	PEMC1216-011-R	CONNECTOR	
CN207	QGB0801K1-30X	CONNECTOR	

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CCD´ BOARD ASSEMBLY <03>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PW3	YB10187A3-02	CCD BOARD ASSY	
IC5001	UPD16510GR	IC	
IC5002	JCY0073	IC	
IC5003	NN2037FAQ	IC	
Q5001	2SC4181	TRANSISTOR	
Q5002	2SC4655/BC/-X	TRANSISTOR	
Q5003	XP5601	TRANSISTOR	
D5001	1SS355	DIODE	
D5002	1SS355	DIODE	
R5001	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R5002	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R5003	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R5004	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R5005	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
R5006	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R5008	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5009	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5010	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5011	NRSA63J-220X	MG RESISTOR	22Ω,1/16W
R5012	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5013	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R5015	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R5016	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R5017	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5019	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5021	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5022	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5023	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R5024	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5025	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5026	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5027	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R5028	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R5029	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R5030	NRSA63J-150X	MG RESISTOR	15Ω,1/16W
R5032	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5033	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5034	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5035	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5036	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5037	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5038	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5039	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5040	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5041	NRSA63J-220X	MG RESISTOR	22Ω,1/16W
C5001	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5002	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5003	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5004	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5012	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5013	NCB21EK-104X	CAPACITOR	0.1μF,25V
C5014	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5015	NBE21EM-105X	T CAPACITOR	1μF,25V
C5016	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5017	NBE21AM-335X	T CAPACITOR	3.3μF,10V
C5020	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5021	NCB21AK-105X	CAPACITOR	1μF,10V
C5024	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5025	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5026	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5027	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5028	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C5029	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5030	NCB21AK-105X	CAPACITOR	1μF,10V
C5031	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5032	NBE21CM-105X	T CAPACITOR	1μF,16V
C5033	NDC31HJ-510X	CAPACITOR	51pF,50V
C5034	NCB31CK-104X	CAPACITOR	0.1μF,16V
C5035	NBE40GM-336X	T CAPACITOR	33μF,4.0V
C5036	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C5037	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C5038	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C5039	NCB31CK-473X	CAPACITOR	0.047μF,16V
C5040	NCB31CK-104X	CAPACITOR	0.1μF,16V
C5041	NCB31CK-104X	CAPACITOR	0.1μF,16V
C5042	NCB31CK-104X	CAPACITOR	0.1μF,16V
C5044	NCF21CZ-105X	CAPACITOR	1μF,16V

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C5045	NCB31EK-103X	CAPACITOR	0.01µF,25V
	C5046	NBE70JM-107X	T CAPACITOR	100µF,6.3V
	C5049	NCB31CK-104X	CAPACITOR	0.1µF,16V
	L5001	NQL144K-101X	COIL	100µH
	L5002	NQL144K-101X	COIL	100µH
	L5003	NQL144K-101X	COIL	100µH
	L5004	NQL164K-220X	COIL	22µH
	L5005	NQL164K-220X	COIL	22µH
	L5006	NQR0129-003X	FERRITE BEAD	
	L5007	NQR0129-003X	FERRITE BEAD	
	L5008	NQR0129-003X	FERRITE BEAD	
	L5009	NQR0129-003X	FERRITE BEAD	
	X5001	NAX0162-001X	CXO	
	CN5001	NNZ0003-001X	CCD SOCKET	

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SENSOR BOARD ASSEMBLY <04>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YB10186G	SENSOR BOARD ASSY	
⚠	IC1601	AN3861SA	IC	
	IC1602	XRA10324AF	IC	
		or BA10324AF	IC	
	IC1651	BA6862FS	IC	
	IC1701	BA6417F	IC	
	IC3501	M52385FP	IC	
	Q1	CNB20010	IC(PHOTO SENSOR	
	Q2	CNB20010	IC(PHOTO SENSOR	
	Q3	PN207-/NCLF/VI	PHOTO TRANSISTOR	
	Q4	PN207-/NCLF/VI	PHOTO TRANSISTOR	
	Q3501	2SD2114K/UV/-X	TRANSISTOR	
	Q3502	2SD2114K/UV/-X	TRANSISTOR	
	Q3503	2SD2114K/UV/-X	TRANSISTOR	
	Q3504	2SD2114K/UV/-X	TRANSISTOR	
	Q3506	DTC144EE	TRANSISTOR	
		or RN1104	TRANSISTOR	
		or UN9213	TRANSISTOR	
	Q3507	DTC144EE	TRANSISTOR	
		or RN1104	TRANSISTOR	
		or UN9213	TRANSISTOR	
	Q3901	2SA1610	TRANSISTOR	
	QA1651	MDC02	TR ARRAY	
	D1	LN57-/LF/VI	LE DIODE	
	R1601	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R1602	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
	R1603	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1604	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1605	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1606	NRV142F-R33X	CMF RESISTOR	0.33Ω,1/4W
	R1607	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1608	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
	R1609	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
	R1610	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1651	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
	R1652	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
	R1653	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R1654	NRSA63J-113X	MG RESISTOR	11kΩ,1/16W
	R1655	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1656	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R1657	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
	R1658	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1659	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1660	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1661	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R1662	NRS12BK-R68W	MG RESISTOR	0.68Ω,1/2W
	R1701	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
	R1702	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
	R3501	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
	R3503	NRSA63J-751X	MG RESISTOR	750Ω,1/16W
	R3504	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
	R3506	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
	R3508	NRSA63J-751X	MG RESISTOR	750Ω,1/16W
	R3509	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
	R3514	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R3515	NRSA63J-243X	MG RESISTOR	24kΩ,1/16W
	R3903	NRSA63J-752X	MG RESISTOR	7.5kΩ,1/16W
	R3904	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
	R3905	NRSA63J-8R2X	MG RESISTOR	8.2Ω,1/16W
	C1601	NCB31EK-472X	CAPACITOR	0.0047µF,25V
	C1602	NCB31EK-472X	CAPACITOR	0.0047µF,25V
	C1603	NCB31EK-472X	CAPACITOR	0.0047µF,25V
	C1604	NCF21CZ-105X	CAPACITOR	1µF,16V
	C1605	NCF21CZ-105X	CAPACITOR	1µF,16V
	C1606	NCF21CZ-105X	CAPACITOR	1µF,16V
	C1607	NCB31EK-223X	CAPACITOR	0.022µF,25V
	C1608	NCB31EK-223X	CAPACITOR	0.022µF,25V
	C1609	NCB31EK-223X	CAPACITOR	0.022µF,25V
	C1610	NDC31HJ-331X	CAPACITOR	330pF,50V
	C1611	NCB31CK-473X	CAPACITOR	0.047µF,16V
	C1612	NCB31EK-103X	CAPACITOR	0.01µF,25V
	C1613	NCF21CZ-105X	CAPACITOR	1µF,16V
	C1615	NBE40JM-226X	T CAPACITOR	22µF,6.3V
	C1616	NCB31CK-333X	CAPACITOR	0.033µF,16V
	C1617	NBE21EM-474X	T CAPACITOR	0.47µF,25V
	C1618	NDC31HJ-331X	CAPACITOR	330pF,50V
	C1619	NBE20JM-106X	T CAPACITOR	10µF,6.3V
	C1620	NBE20JM-106X	T CAPACITOR	10µF,6.3V
	C1621	NDC31HJ-221X	CAPACITOR	220pF,50V
	C1623	NCB31EK-103X	CAPACITOR	0.01µF,25V
	C1624	NCB31HK-102X	CAPACITOR	0.001µF,50V
	C1625	NCB31EK-103X	CAPACITOR	0.01µF,25V
	C1651	NCF21EZ-224X	CAPACITOR	0.22µF,25V
	C1652	NCF21EZ-224X	CAPACITOR	0.22µF,25V
	C1653	NCF21EZ-224X	CAPACITOR	0.22µF,25V
	C1654	NCB31EK-223X	CAPACITOR	0.022µF,25V
	C1655	NCB31EK-223X	CAPACITOR	0.022µF,25V
	C1656	NCB31EK-223X	CAPACITOR	0.022µF,25V
	C1657	NCF31CZ-104X	CAPACITOR	0.1µF,16V
	C1658	NCB31CK-104X	CAPACITOR	0.1µF,16V
	C1659	NCB31CK-104X	CAPACITOR	0.1µF,16V
	C1660	NCF31CZ-104X	CAPACITOR	0.1µF,16V
	C1662	NBE20JM-106X	T CAPACITOR	10µF,6.3V
	C1663	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
	C1664	NCB31EK-223X	CAPACITOR	0.022µF,25V
	C1665	NCB31EK-223X	CAPACITOR	0.022µF,25V
	C1702	NCF21CZ-105X	CAPACITOR	1µF,16V
	C3501	NBE20JM-106X	T CAPACITOR	10µF,6.3V
	C3502	NCF21CZ-105X	CAPACITOR	1µF,16V
	C3503	NCB31EK-103X	CAPACITOR	0.01µF,25V
	C3504	NCB31EK-103X	CAPACITOR	0.01µF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C3505	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3506	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3507	NCF21CZ-105X	CAPACITOR	1μF,16V
C3508	NCB31EK-153X	CAPACITOR	0.015μF,25V
C3509	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3510	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C3511	NDC31HJ-270X	CAPACITOR	27pF,50V
C3513	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C3514	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3515	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C3516	NDC31HJ-100X	CAPACITOR	10pF,50V
C3517	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3518	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C3519	NDC31HJ-100X	CAPACITOR	10pF,50V
C3520	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C3522	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3523	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C3524	NDC31HJ-270X	CAPACITOR	27pF,50V
C3901	NCF21CZ-105X	CAPACITOR	1μF,16V
L3501	NQL144K-220X	COIL	22μH
L3901	NQL144K-101X	COIL	100μH
SW1	NSW0037-001X	PUSH SWITCH	
SW2	NSW0036-001X	PUSH SWITCH	
SW3	NSW0036-001X	PUSH SWITCH	
HD1	LY40042-001A	HOLDER B/B	
CN1	QGF0507F2-10X	CONNECTOR	
CN2	QGF0502F1-06X	CONNECTOR	
CN3	QGF0507F2-18X	CONNECTOR	
CN4	YU41356-2-P	CONNECTOR	
CN5	QGF0502F2-11X	CONNECTOR	
CN6	PEMC1202-050-R	CONNECTOR	
SD1	LY40033-001A	SHIELD CASE	
SD2	LY40035-001A	SHIELD SHEET	

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REAR BOARD ASSEMBLY <05>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PW	YB20787B-01	REAR BOARD ASSY	
IC6001	MB3785APFV	IC	
Q6001	DTA144EE	TRANSISTOR	
Q6002	DTC114EE	TRANSISTOR	
Q6003	2SB1302/ST/-X	TRANSISTOR	
Q6007	MPL1	TRANSISTOR	
Q6008	2SC4081/S/-X	TRANSISTOR	
Q6009	DTA114EE	TRANSISTOR	
Q6010	DTC114EE	TRANSISTOR	
Q6011	2SB1121/TU/-X	TRANSISTOR	
Q6012	DTC144EE	TRANSISTOR	
Q6013	DTA144EE	TRANSISTOR	
Q6014	MPL1	TRANSISTOR	
Q6015	2SB1308/QR/-X	TRANSISTOR	
Q6016	DTC114EE	TRANSISTOR	
Q6201	2SB1308/QR/-X	TRANSISTOR	
Q6202	2SC4617/QRS/-X	TRANSISTOR	
D6001	RB160L-40-X	SB DIODE	
D6002	DWA010	SB DIODE	
D6003	1SS355	DIODE	
R6001	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6002	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6003	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6004	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6006	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6007	NRVA63D-682X	CMF RESISTOR	6.8kΩ,1/16W
R6008	NRVA63D-823X	CMF RESISTOR	82kΩ,1/16W
R6009	NRVA63D-223X	CMF RESISTOR	22kΩ,1/16W
R6010	NRVA63D-512X	CMF RESISTOR	5.1kΩ,1/16W
R6011	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6012	NRVA63D-113X	CMF RESISTOR	11kΩ,1/16W
R6013	NRSA63J-274X	MG RESISTOR	270kΩ,1/16W
R6014	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R6016	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6017	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6019	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6021	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R6022	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R6023	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R6024	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R6031	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6032	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6034	NRVA63D-123X	CMF RESISTOR	12kΩ,1/16W
R6035	NRVA63D-392X	CMF RESISTOR	3.9kΩ,1/16W
R6040	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6041	NRVA63D-243X	CMF RESISTOR	24kΩ,1/16W
R6042	NRVA63D-332X	CMF RESISTOR	3.3kΩ,1/16W
R6043	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R6044	NRVA63D-273X	CMF RESISTOR	27kΩ,1/16W
R6045	NRVA63D-242X	CMF RESISTOR	2.4kΩ,1/16W
R6046	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R6048	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6049	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R6050	NRVA63D-473X	CMF RESISTOR	47kΩ,1/16W
R6051	NRVA63D-273X	CMF RESISTOR	27kΩ,1/16W
R6053	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6054	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R6055	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
⚠ R6101	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R6201	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6202	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6203	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6204	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
C6001	NCB11CK-105X	CAPACITOR	1μF,16V
C6002	NCB11AK-225X-A	CAPACITOR	2.2μF,10V
C6005	NCB11CK-105X	CAPACITOR	1μF,16V
C6006	NCB31CK-104X	CAPACITOR	0.1μF,16V
C6007	NCB11AK-225X-A	CAPACITOR	2.2μF,10V
C6012	NCS31HJ-561X	CAPACITOR	560pF,50V
C6013	NCB31HK-102X	CAPACITOR	0.001μF,50V
C6014	NCB31EK-103X	CAPACITOR	0.01μF,25V
C6015	NCB31HK-472X	CAPACITOR	0.0047μF,50V
C6017	NCB31EK-103X	CAPACITOR	0.01μF,25V
C6018	NCB21CK-224X	CAPACITOR	0.22μF,16V
C6019	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
C6021	NDC31HJ-431X	CAPACITOR	430pF,50V
C6022	NEA71CM-226X	E CAPACITOR	22μF,16V
C6023	NCB31CK-104X	CAPACITOR	0.1μF,16V
C6024	NCB31CK-104X	CAPACITOR	0.1μF,16V
C6026	NCB31EK-103X	CAPACITOR	0.01μF,25V
C6027	NCB31CK-104X	CAPACITOR	0.1μF,16V
C6029	NCB31EK-103X	CAPACITOR	0.01μF,25V

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C6033	NCB31HK-102X	CAPACITOR	0.001µF,50V
	C6034	NCB31EK-472X	CAPACITOR	0.0047µF,25V
	C6035	NCB31EK-472X	CAPACITOR	0.0047µF,25V
	C6036	NCB31EK-103X	CAPACITOR	0.01µF,25V
	C6037	NCB31EK-223X	CAPACITOR	0.022µF,25V
	C6038	NCB11AK-225X-A	CAPACITOR	2.2µF,10V
	C6041	NDC31HJ-270X	CAPACITOR	27pF,50V
	C6043	NCB11CK-105X	CAPACITOR	1µF,16V
	C6044	NEA71CM-226X	E CAPACITOR	22µF,16V
	C6047	NCB11CK-105X	CAPACITOR	1µF,16V
	C6048	NCB11CK-105X	CAPACITOR	1µF,16V
	C6049	NCB31HK-152X	CAPACITOR	0.0015µF,50V
	C6050	NCB11CK-105X	CAPACITOR	1µF,16V
	C6051	NCB11CK-105X	CAPACITOR	1µF,16V
	C6052	NCB11CK-105X	CAPACITOR	1µF,16V
	C6053	NCB11CK-105X	CAPACITOR	1µF,16V
	C6056	NCB11CK-105X	CAPACITOR	1µF,16V
	C6057	NCB11AK-225X-A	CAPACITOR	2.2µF,10V
	C6059	NCB31HK-681X	CAPACITOR	680pF,50V
	C6060	NCB11CK-105X	CAPACITOR	1µF,16V
	C6061	NCB11CK-105X	CAPACITOR	1µF,16V
	C6101	NCB31EK-103X	CAPACITOR	0.01µF,25V
	L6001	NQL17CM-100X	COIL	10µH
	L6002	NQL17CM-100X	COIL	10µH
	L6003	NQL17CM-220X	COIL	22µH
	L6004	NQL17CM-100X	COIL	10µH
	L6005	NQL17CM-220X	COIL	22µH
	L6006	NQL03BK-150X	COIL	15µH
	L6007	NQL164K-470X	COIL	47µH
	L6008	NQL164K-470X	COIL	47µH
	L6009	NQL17CM-390X	COIL	39µH
	L6010	PELN1217-220KY	COIL	22µH
	L6011	NQL03BK-220X	COIL	22µH
	SW6001	PESW0627	SLIDE SWITCH	
	T6001	NQS0006-001X	SW TRANSF	
⚠	J6001	YQ31344-2	BATT TERM UNIT	
	J6002	YQ32092-3	BATT TERM UNIT	
	CN601	ML-Y00784A	REG WIRE	
	CN602	QGF0502F1-08X	FPC CONNE	
⚠	CP6001	ICP-S1.8-X	CIRCUIT PROTECTOR	
⚠	CP6002	ICP-S1.8-X	CIRCUIT PROTECTOR	
⚠	CP6003	ICP-S0.5-X	CIRCUIT PROTECTOR	

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OPERATION(CAMERA)BOARD ASSEMBLY <08>

PW	LY10018-014A	OPERATION(CAMERA)BOARD ASSY

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OPERATION(DECK)BOARD ASSEMBLY <09>

PW	LY10001-001A	OPERATION(DECK)BOARD ASSY

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E.VF BOARD ASSEMBLY(TYPE T) <10>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YB20748E-03	EVF BOARD ASSY	
	IC7001	BA7149F-XE	IC	
	Q7001	2SD968A(RS)	PH TRANSISTOR	
	Q7002	2SA1748(QR)	PH TRANSISTOR	
	Q7003	2SA1748(QR)	PH TRANSISTOR	
	D7001	MA142WA	DIODE	
	R7002	QRSA08J-3R9YN	RESISTOR	3.9Ω,1/10W
	R7003	NRVA62D-183N	RESISTOR	18kΩ,1/16W
	R7005	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
	R7006	QRSA08J-113YN	RESISTOR	11kΩ,1/10W
	R7007	QRSA08J-330YN	RESISTOR	33Ω,1/10W
	R7008	QRSA08J-394YN	RESISTOR	390kΩ,1/10W
	R7009	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
	R7010	NRVA62D-104N	RESISTOR	100kΩ,1/16W
	R7011	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
	R7012	QRSA08J-221YN	RESISTOR	220Ω,1/10W
	R7013	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
	R7014	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
	R7015	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
	R7016	QRSA08J-122YN	RESISTOR	1.2kΩ,1/10W
	R7017	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
	R7018	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
	R7019	QRSA08J-120YN	RESISTOR	12Ω,1/10W
	R7020	QRS188J-685YN	RESISTOR	6.8MΩ,1/8W
	R7021	QRSA08J-475YN	RESISTOR	4.7MΩ,1/10W
	R7022	QRSA08J-475YN	RESISTOR	4.7MΩ,1/10W
	R7023	QRSA08J-564YN	RESISTOR	560kΩ,1/10W
	R7024	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
	R7025	QRSA08J-275YN	RESISTOR	2.7MΩ,1/10W
	R7026	QRSA08J-275YN	RESISTOR	2.7MΩ,1/10W
	R7029	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
	R7030	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
	VR7001	NVP0001-221X	V RESISTOR,V SIZE	
	VR7002	NVP0001-225X	V RESISTOR,R BRIGHT	
	VR7003	PERE0595-565	V RESISTOR,FOCUS	
	C7001	QFV21HJ-104AZ	F CAPACITOR	0.1µF,50V
	C7002	PECA1131-A107	E CAPACITOR	100µF,10V
	C7003	PECA1131-A107	E CAPACITOR	100µF,10V
	C7004	PECA1132-A107	E CAPACITOR	100µF,10V
	C7005	NCF21CZ-105X	CAPACITOR	1µF,16V
	C7006	QCYA1EK-153	CAPACITOR	0.015µF,25V
	C7007	NCB11CK-105X	CAPACITOR	1µF,16V
	C7008	NCF21CZ-105X	CAPACITOR	1µF,16V
	C7009	PECA1131-A107	E CAPACITOR	100µF,10V
	C7010	PECA1135-Y	CAPACITOR	5600pF,100V
	C7011	QCTA1CH-180	CAPACITOR	18pF,16V
	C7012	QEKC1HM-105	E CAPACITOR	1µF,50V
	C7013	QCFA1HZ-104	CAPACITOR	0.1µF,50V
	C7014	QCFA1HZ-104	CAPACITOR	0.1µF,50V
	C7015	QCZ0136-151Z	CAPACITOR	150pF,1kV
	C7016	PECA1133	CAPACITOR	330pF,500V
	L7001	PELN1175	COIL	
	L7002	PU49993-101	COIL	100µH
	L7003	PELN1101-680JY	COIL	68µH
⚠	T7001	PELN1174	FB TRANS	
	CN7001	PEMC0856-4	CONNECTOR	
	CN7002	PEMC1004-006	CONNECTOR	
	CN7003	PEMC1172	CONNECTOR	

* *

UPPER DRUM BOARD <40>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YDM3073-8	BOARD (UPPER DRUM)	

* *

E.VF BOARD ASSEMBLY(TYPE M) <50>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YQ32236-600	E.VF BOARD ASSY	
	IC1	BA7149F	IC	
	Q1	2SA1037K	TRANSISTOR,TR1	
		or 2SA1179	TRANSISTOR,TR1	
		or 2SA1235	TRANSISTOR,TR1	
	Q2	2SC4132	TRANSISTOR,TR2	
	Q3	2SC4618	TRANSISTOR,TR3	
		or 2SC4655	TRANSISTOR,TR3	
	D1	RLS245	DIODE	
	R1	YQ31803-501	RESISTOR	9.1kΩ,1/10W
	R2	QRSA08G-333YN	RESISTOR	33kΩ,1/10W
	R3	QRSA08J-3R9YN	RESISTOR	3.9Ω,1/10W
	R4	QRSA08J-390YN	RESISTOR	39Ω,1/10W
	R5	YU30595-111	RESISTOR	390Ω,1/10W
	R6	YU30595-113	RESISTOR	91kΩ,1/10W
	R7	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
	R8	YQ31803-502	RESISTOR	2.2kΩ,1/10W
	R9	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
	VR1	YQ31803-504	V RESISTOR,V SIZE	470Ω
	VR2	YQ31803-505	V RESISTOR,H HOLD	47kΩ
	VR4	YQ31803-506	V RESISTOR,BRIGHT	1MΩ
	R10	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
	R11	QRSA08J-330YN	RESISTOR	33Ω,1/10W
	R12	QRSA08J-113YN	RESISTOR	11kΩ,1/10W
	R13	YQ31803-503	RESISTOR	3.9kΩ,1/10W
	R14	QRSA08J-822YN	RESISTOR	8.2kΩ,1/10W
	R15	QRSA08J-182YN	RESISTOR	1.8kΩ,1/10W
	R16	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10W
	R17	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
	R18	QRSA08J-471YN	RESISTOR	470Ω,1/10W
	R19	QRSA08F-103YN	RESISTOR	10kΩ,1/10W
	R20	QRSA08F-152YN	RESISTOR	1.5kΩ,1/10W
	R21	QRSA08J-275YN	RESISTOR	2.7MΩ,1/10W
	R22	QRSA08J-275YN	RESISTOR	2.7MΩ,1/10W
	R23	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
	R24	QRSA08J-154YN	RESISTOR	150kΩ,1/10W
	R25	QRSA08J-2R7YN	RESISTOR	2.7Ω,1/10W
	R26	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
	R27	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
	C1	YQ31803-507	CAPACITOR	0.22μF,16V
	C2	YQ31304-503	CAPACITOR	1μF,16V
	C3	YQ31304-504	CAPACITOR	1500pF,50V
	C4	YQ31304-503	CAPACITOR	1μF,16V
	C5	YQ31304-506	E CAPACITOR	100μF,10V
	C6	YQ31304-506	E CAPACITOR	100μF,10V
	C7	YQ31304-506	E CAPACITOR	100μF,10V
	C8	YQ31304-503	CAPACITOR	1μF,16V
	C9	YQ31392-501	CAPACITOR	100pF,16V
	C10	YU30531-163	CAPACITOR	0.047μF
	C11	QER61HM-100	E CAPACITOR	10pF,50V
	C12	YQ31803-508	F CAPACITOR	6200pF,100V
	C13	YQ31304-506	E CAPACITOR	100μF,10V
	C14	YQ31304-507	CAPACITOR	1500pF,630V
	L1	YQ30723-115	COIL	100μH
	TH1	YU30236-110	THERMISTOR	
	WR1	YQ32236-580	FPC	
⚠	FBT1	YQ31803-550	FLY BACK TRANS	
	HLC1	YQ31803-560	H.COIL	
	CN1	YQ31803-570	CONNECTOR	
	CN2	YQ31803-571	CONNECTOR	
	CN3	YQ31803-572	CONNECTOR	

SECTION 6
TECHNICAL INFORMATION

6.1 EMERGENCY DISPLAY

Whenever some abnormal signal is supplied to mechacon CPU, an error number (E 04, for example) displayed in the electronic view finder.

E. VF DISPLAY	Symptom	Mode when observed	Resulting mode
E07	Short circuit of capstan MDA	Power ON	Power OFF
E06	CAPSTAN FG input absent	EDIT	STOP
E04	DRUM FF input absent	DRUM rotation	STOP
E03	SUPPLY REEL FG input absent	REC, PLAY, SEARCH, FF	STOP
E02	Mode control motor rotates for more than 10 sec without shift to next mode.	UNLOADING	Mode continues
E01	Mode control motor rotates for more than 10 sec without shift to next mode.	UNLOADING	Mode continues
E00	Overtime the programming transaction	REC, PLAY	EJECT

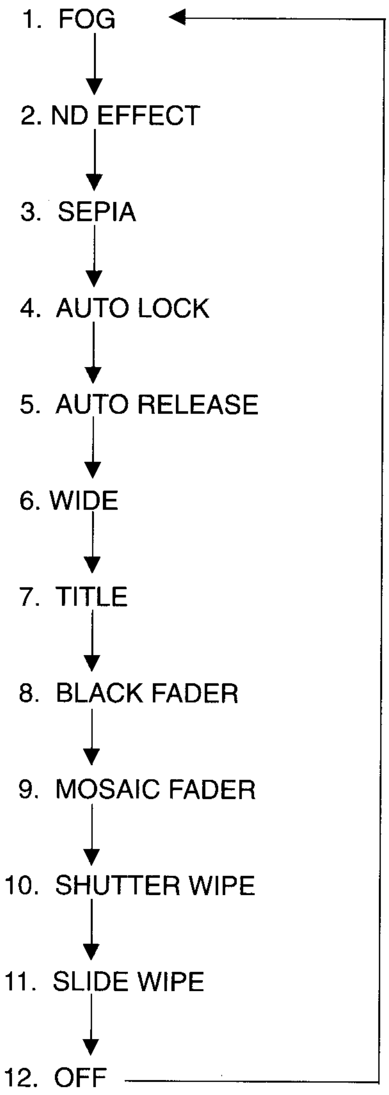
Emergency mode : Indication for 5 minutes, then power OFF
Port states : Same as Stop mode
Effective key : POWER
Shifted mode : Power OFF

6.2 DEMONSTRATION MODE

This model is equipped with the function to display P. AE/EFFECT operations partly in the monitor.

1) How to set DEMONSTRATION mode

   Without any cassette tape being loaded, set the program AE select dial to AUTO MODE RELEASE first, keep the STOP button down then set the POWER switch to the REC position.


1. FOG
2. ND EFFECT
3. SEPIA
4. AUTO LOCK
5. AUTO RELEASE
6. WIDE
7. TITLE
8. BLACK FADER
9. MOSAIC FADER
10. SHUTTER WIPE
11. SLIDE WIPE
12. OFF

2) How to cancel DEMONSTRATION mode

   Set the POWER switch to the POWER OFF position and the DEMONSTRATION mode is cancelled.